627.1409773
H299t

THE THOMPSON LAKE/EMIQUON STORY

The Biology, Drainage, and Restoration of an Illinois River Bottomland Lake

Stephen P. Havera
Katie E. Roat
Lynn L. Anderson

Illinois Natural History Survey
Special Publication 25

Natural History Survey
Library
UNIVERSITY OF
ILLINOIS LIBRARY
AT URBANA-CHAMPAIGN
OAK STREET
LIBRARY FACILITY

NOTICE: **Return or renew all Library Materials! The *Minimum* Fee for each Lost Book is $50.00.**

The person charging this material is responsible for its return to the library from which it was withdrawn on or before the **Latest Date** stamped below.

Theft, mutilation, and underlining of books are reasons for disciplinary action and may result in dismissal from the University.
To renew call Telephone Center, 333-8400

UNIVERSITY OF ILLINOIS LIBRARY AT URBANA-CHAMPAIGN

DEC 16 2005

MAR 22 2010

L161—O-1096

Illinois Natural History Survey, David L. Thomas, Chief
A division of the Illinois Department of Natural Resources, Joel Brunsvold, D

A catalog of the publications of the Illinois Natural History Survey is available price list for other publications and an order blank are included with the publi

Illinois Natural History Survey
Distribution Center
Natural Resources Building
607 East Peabody Drive
Champaign, Illinois 61820

UNIVERSITY
ILLINOIS LIBR
AT URBANA-CHA
NAT. HIST. S

Cover design: Carolyn Nixon
Editor: Charles Warwick

Printed by authority of the State of Illinois
R0005086–4M–10-03
US ISSN 0888-9546

Citation: Havera, S.P., K.E. Roat, and L.L. Anderson. 2003. The Thompson L
and restoration of an Illinois River bottomland lake. Illinois Natural History Survey Special Publication 25. iv + 40 pp.

Equal opportunity to participate in programs of the Illinois Department of Natural Resources (IDNR) and those funded by the U.S. Fish and Wildlife Service and other agencies is available to all individuals regardless of race, sex, national origin, disability, age, religion, or other non-merit factors. If you believe you have been discriminated against, contact the funding source's civil rights office and/or the Equal Employment Opportunity Officer, IDNR, One Natural Resources Way; Springfield, IL. 62702-1271; 217/785-0067; TTY 217/782-9175.

Printed with soy ink on recycled and recyclable paper.

The Thompson Lake/Emiquon Story

The Biology, Drainage, and Restoration of an Illinois River Bottomland Lake

Stephen P. Havera and Katie E. Roat
Illinois Natural History Survey

Lynn L. Anderson
University of Illinois

Illinois Natural History Survey
Special Publication 25

October 2003

Natural History Survey
Library
UNIVERSITY OF
ILLINOIS LIBRARY
AT URBANA-CHAMPAIGN
OAK STREET
LIBRARY FACILITY

Illinois Natural History Survey, David L. Thomas, Chief
A division of the Illinois Department of Natural Resources, Joel Brunsvold, Director

A catalog of the publications of the Illinois Natural History Survey is available without charge from the address below. A price list for other publications and an order blank are included with the publications catalog.

Illinois Natural History Survey
Distribution Center
Natural Resources Building
607 East Peabody Drive
Champaign, Illinois 61820

Cover design: Carolyn Nixon
Editor: Charles Warwick

UNIVERSITY OF
ILLINOIS LIBRARY
AT URBANA-CHAMPAIGN
NAT. HIST. SURV.

Printed by authority of the State of Illinois
R0005086–4M–10-03
US ISSN 0888-9546

Citation: Havera, S.P., K.E. Roat, and L.L. Anderson. 2003. The Thompson Lake/Emiquon story: the biology, drainage, and restoration of an Illinois River bottomland lake. Illinois Natural History Survey Special Publication 25. iv + 40 pp.

Equal opportunity to participate in programs of the Illinois Department of Natural Resources (IDNR) and those funded by the U.S. Fish and Wildlife Service and other agencies is available to all individuals regardless of race, sex, national origin, disability, age, religion, or other non-merit factors. If you believe you have been discriminated against, contact the funding source's civil rights office and/or the Equal Employment Opportunity Officer, IDNR, One Natural Resources Way; Springfield, IL. 62702-1271; 217/785-0067; TTY 217/782-9175.

Printed with soy ink on recycled and recyclable paper.

The Thompson Lake/Emiquon Story

The Biology, Drainage, and Restoration of an Illinois River Bottomland Lake

Stephen P. Havera and Katie E. Roat
Illinois Natural History Survey

Lynn L. Anderson
University of Illinois

Illinois Natural History Survey
Special Publication 25

October 2003

Digitized by the Internet Archive
in 2021 with funding from
University of Illinois Urbana-Champaign

https://archive.org/details/thompsonlakeemiq25have

627.1409773
H299t

Nat Hist
Survey

CONTENTS

Acknowledgements iv

Introduction 1

Through the Telescope 2
- Native Americans 2
- Early Descriptions of Thompson Lake and Its Vicinity 2
- The Heyday of Thompson Lake and the Illinois River Valley 11
- Who Owns Thompson Lake—Public or Private? 14
- A Farm is Created 18
- A Refuge is Born 25

Under the Microscope 27

Summary 34

Literature Cited 35

Appendix 1 39

ACKNOWLEDGMENTS

Drs. Glen C. Sanderson and Frank C. Bellrose, Illinois Natural History Survey; N. Ross Adams, Manager of the Illinois River National Wildlife and Fish Refuges, U.S. Fish and Wildlife Service; and Thomas V. Lerczak, Illinois Nature Preserves Commission, provided many beneficial suggestions and reviewed the manuscript. Duane E. Esarey and Judith A. Franke, Dickson Mounds Museum, contributed helpful comments and information. Charles E. Warwick and Thomas E. Rice, Publications Office, Illinois Natural History Survey, provided editorial and publishing assistance. Michelle M. Horath, Illinois Natural History Survey, assisted with photos and technical details. We would also like to especially thank those who provided encouragement for the restoration of Thompson and Flag lakes through the many efforts of the Thompson Lake Feasibility Committee. It was because of their persistence, interest, dedication, and passion that Emiquon National Wildlife Refuge is a reality.

INTRODUCTION

Figure 1. Thompson Lake was the largest bottomland lake in the Illinois River valley before it was drained in 1923 (Submerged and Shore Lands Legislative Investigating Committee 1911).

Thompson Lake was the largest and most recognized bottomland lake in the Illinois River valley (Figure 1). The populations of avifauna, particularly waterfowl, and fishes that frequented and inhabited Thompson and adjoining Flag Lake attracted Native Americans, and later explorers, settlers, and tourists, to its shores. Nestled immediately north of the confluence of the Spoon and Illinois rivers in Fulton County, Thompson Lake was a biological paradise (Figure 2). The story of the fate of Thompson Lake is representative of many other bottomland lakes along the Illinois River and other large midwestern floodplains. The Thompson Lake story is unique, however, because of its centuries of fertility and productivity; the decades of controversy surrounding its public versus private ownership and whether it was navigable or could legally be drained; its importance to the local and regional economies for sustenance, income, recreation, and tourism; its drainage and subsequent development into the largest farm in the state; and the often contentious discussions concerning its reestablishment. Since 1986, there have been strong renewed interest and organized endeavors to restore Thompson Lake. As a result, this story is presented to coalesce the wealth of available information, to enhance wetland restoration efforts in the Illinois Valley, and to illustrate the lake's intriguing past, present, and future.

Figure 2. An eastward view of Thompson Lake is shown as it appeared in 1915. (INHS files)

THROUGH THE TELESCOPE

Native Americans

Thompson and Flag lakes were part of a series of backwater lakes that occupied the Illinois River floodplain near Havana (Figure 3). Archaeologists have found artifacts as old as 5,000–6,000 years in the prehistoric village sites near the Thompson and Flag Lake area (Esarey 1993). The rich Illinois River floodplain supported large prehistoric populations of Native Americans that peaked between 800–1400 A.D. (Esarey 1993). Although these "Mississippians" hunted and gathered wild plants and seeds, they were more inclined to cultivation than some cultures and were excellent farmers. The principal crop was maize, but they also grew beans, squash, pumpkins, and a few other plants (Thompson n.d.).

The Mississippian population declined after 1400 A.D. leading archaeologists to believe that the Illini tribe found in the area by early French explorers was not closely related to the Mississippians who lived there centuries earlier (Esarey 1993). The Native Americans encountered by the explorers were from a confederation consisting of the Peoria, Kaskaskia, Cahokia, Michigamea, and Tamoroa tribes (Jenkins, Merchant, and Nankivil and Walraven 1950). Their confederation name "Illiniwek" meant full-grown man. They were good hunters and runners and located their villages near rivers and streams giving them an easy escape route from their enemies, the Iroquois (Jenkins, Merchant, and Nankivil and Walraven 1950). A chronology of the cultural history of the Thompson Lake vicinity was conducted by Hajic et al. (2002).

Early Descriptions of Thompson Lake and Its Vicinity

By most historical accounts, seven Frenchmen were the first Euopeans to explore the Illinois in 1673. They included Pere Marquette and Louis Joliet (Jenkins, Merchant, and Nankivil and Walraven 1950). Later, the remnants of Robert Cavalier de LaSalle's expedition led by Henri Joutel and LaSalle's brother were making their way up the Mississippi River and entered the Illinois River at the confluence region near present-day Alton on September 3, 1687 (Esarey 1993, 7–10) (Original: The 1687 Journal of Joutel; taken from Margry's French transcription). On September 9 they

> ... came to a lake about a half a league broad [the juncture of Spoon River, Thompson and Flag lakes, the Illinois River, and Quiver Lake], where Couture had told us, when we were with the Arkansea, that we must go to the left, which we did, but not quite properly, for we entered a river which came from the left [Spoon River], and went up it. When, however, we had gone a short way up I saw that we were not following the course we had to keep. I told Monsieur Cavalier [LaSalle's brother] several times that this river could not be the one we had to go by; but we went on nonetheless, as Monsieur Cavalier relied on what Couture had told him. We therefore went up the stream for about a league and a half, until we saw that the water was getting so very shallow that we could scarcely find enough water to float our boat, so we were obliged to go back to the lake. One of our Indians then took his bow and arrow and went off along the lake, to see if he could not see the way out and the course of the river; and on his return, he told us that we must follow the lake.

Figure 3. This map depicts the Illinois River and backwater lakes near Havana in 1911 (Forbes and Richardson 1913).

Next day, the 10th of September, we started, taking the other side [East] of the lake, where we went wrong again; for after going on for some distance, we were unable to get to the river on account of the shallow and small islands enclosing the entrance to it [Quiver Lake—Figure 4]. We were obliged therefore to go back and look again for the channel leading to the river, which we found on the left. This lake bears the name of the "Deaux Mammelles" [the breasts]...as there are two small mountains, round and separate from one another [Twin Mounds on Quiver Beach], which has led to travelers and people of the country giving them that name [Figure 5]. We came within sight of several camps round this lake, where the Indians had encamped; and I afterwards learned that they come there to fish at certain parts of the year; and that it is not a good place for hunting animals. They smoke fish, to take back to their village; for these tribes have fixed times for each kind of hunting and fishing.

We continued our journey, when we had found the channel into our river, which we found to be of its usual width, with quantities of game almost everywhere, of various sorts and kinds, such as swans, bustards, thrushes, geese, ducks, teals, and other kinds as well as fish in plenty.

Another account is found in the 1773 Journal of Patrick Kennedy (Esarey 1993, 13):

August 4, 1773,.... About 12 o'clock we passed the River Sangamond, and about sunset we passed the River Demi-Quian [Spoon River]. It comes in on the western side of the Illinois River.

We encamped on the southeastern side of the Illinois River, opposite a very large

Figure 4. Quiver Lake, shown as it appeared in the late 1890s, occupied the east side of the Illinois River across from Thompson and Flag lakes located beyond the tree line (Forbes 1897).

Figure 5. The Twin Mounds, Native American burial sites, located on the east bank of Quiver Lake, were convenient land marks for river travelers (Forbes 1897).

> savannah, belonging to and called, the Demi-Quian Swamp. The lands on the southeastern side [Havana] are high and thinly timbered; but at the place of our encampment are fine meadows, extending farther than the eye can reach, and affording a delightful prospect [Quiver Beach]. The low lands on the western side of the Illinois River extend so far back that no high ground can be seen. Here is plenty of Buffaloe, Deer, Elk, Turkeys, etc.
>
> August 5, 1773, It rained all day, which detained us till the evening, when we embarked and rowed till dark. In our way we passed Lake Demi-Quian [Thompson and Flag lakes], 200 yards west from the river of that name. It is of a circular figure, six miles across, and discharges itself by a small passage four feet deep into the Illinois River.

The early French explorers determined that the Illini and Potawatomi tribes called Spoon River "Riviere de Emicouen" (Esarey 1993). Emicouen was the word for "spoon" and most likely referred to the abundance of freshwater mussel shells in this stream, which were used as utensils by the local Indian groups. Maps and written accounts of the explorers show various spellings of the name—Amequon, Emicouen, Emiquon, Meequen, Mequen, Mequin, Mequoin, Micouene, Micouenne, and Miquane (Esarey 1993).

Because the explorers were more interested in the northern and southernmost parts of the new country, there were no early attempts to settle in the middle Illinois River region. Therefore, according to Esarey (1993), Emiquon does not appear on many of the maps of the French explorations. It was first seen on a 1684 map of North America. Detailed maps of the Illinois River and its tributaries were not drawn until the late 1700s. These maps were labeled Spoon River and Thompson Lake "Demi-Quian River" and "Demi-Quian Lake," respectively. "Demi-Quian" is probably the English transliteration of the French "d'Emiquon" as in "Riviere de Emiquon." Maps dated 1778, 1785, 1796, and 1803 portray Demi-Quian Lake as a large circular body of water just above Demi-Quian River (Figure 6).

After the French and Indian Wars, Great Britain gained control of the area, but it was not until 1765 that the British flag flew over the territory. In the ensuing years, there was constant turmoil as the Native Americans, British, French, and American settlers struggled for possession of the land. When the Northwest Territory was created in 1787, what is now Illinois became part of the United States. In 1800, Congress created the Indiana Territory out of the western part of the Northwest Territory, and in 1809, the Territory of Illinois was established. Illinois was surveyed into townships beginning in 1810 and, by 1814, the territorial government of Illinois had clear title to some southern parts of the territory and began selling the land. Title to the Military Tract, which included Fulton County, was ceded by the Native Americans to the territorial government in 1816 (Esarey 1993) (Figure 7). On December 3, 1818, the State of Illinois was formally admitted to the Union.

After statehood was declared, incoming settlers increased the population from about 55,200 in 1820 to more than 157,000 in 1830 (Jenkins, Merchant, and Nankivil and Walraven 1950). The Illinois River was a primary travel route for the immigrants and quickly developed into a major trade route as well. As a result of the burgeoning number of settlers and the Black Hawk War in 1832, there were few Native Americans in Illinois by 1833 (Jenkins, Merchant, and Nankivil and Walraven 1950).

The arrival of the railroad and the completion of the Illinois and Michigan Canal in 1848 brought more immigrants from foreign countries to the frontier and by 1860, over 300,000 immigrants had settled in Illinois (Jenkins, Merchant, and Nankivil and Walraven 1950). It was during these years that Abraham Lincoln traveled in the area, first as a surveyor and later as a candidate for the Illinois Senate. It is probable that he saw a land similar to that later described by Charles Hallock in his Sportsman's and General Guide (1877, 46).

> The most noted sporting grounds in Central Illinois, if not in the whole State, lie upon the Illinois River about twenty-five miles below Peoria. The game here is of great variety and abundance, consisting of ducks; the mallard, wood or summer, blue and green-winged teal, widgeon, canvas back, and nearly all the other inland varieties, with several of the salt water species; geese, the brant and common wild goose; white pelicans, sand hill cranes, herons, water turkeys, coots, plover, snipe, common hawks, bitterns, curlew, loons, dippers, quail, pinnated grouse, woodcock, large fox squirrels; catfish, buffalo fish, pike, bass and most of the ordinary varieties of fresh water fish. Of fur bearing animals, there are raccoons, minks and muskrats. The hunting grounds lie upon either side of the river. The part west is in Fulton County, that east in Mason County. Havana, a small village near the south end of them, is a good initial point, either by railroad or river. They are about eight miles long, and one and a half miles on each side of the stream. They are "bottom lands," and generally heavily timbered, but in some places open, except brush, flags, weeds, etc. They are lower, back from the river, than on its banks, which are open, hard, dry, and fine for camping, with plenty of wood. Blind

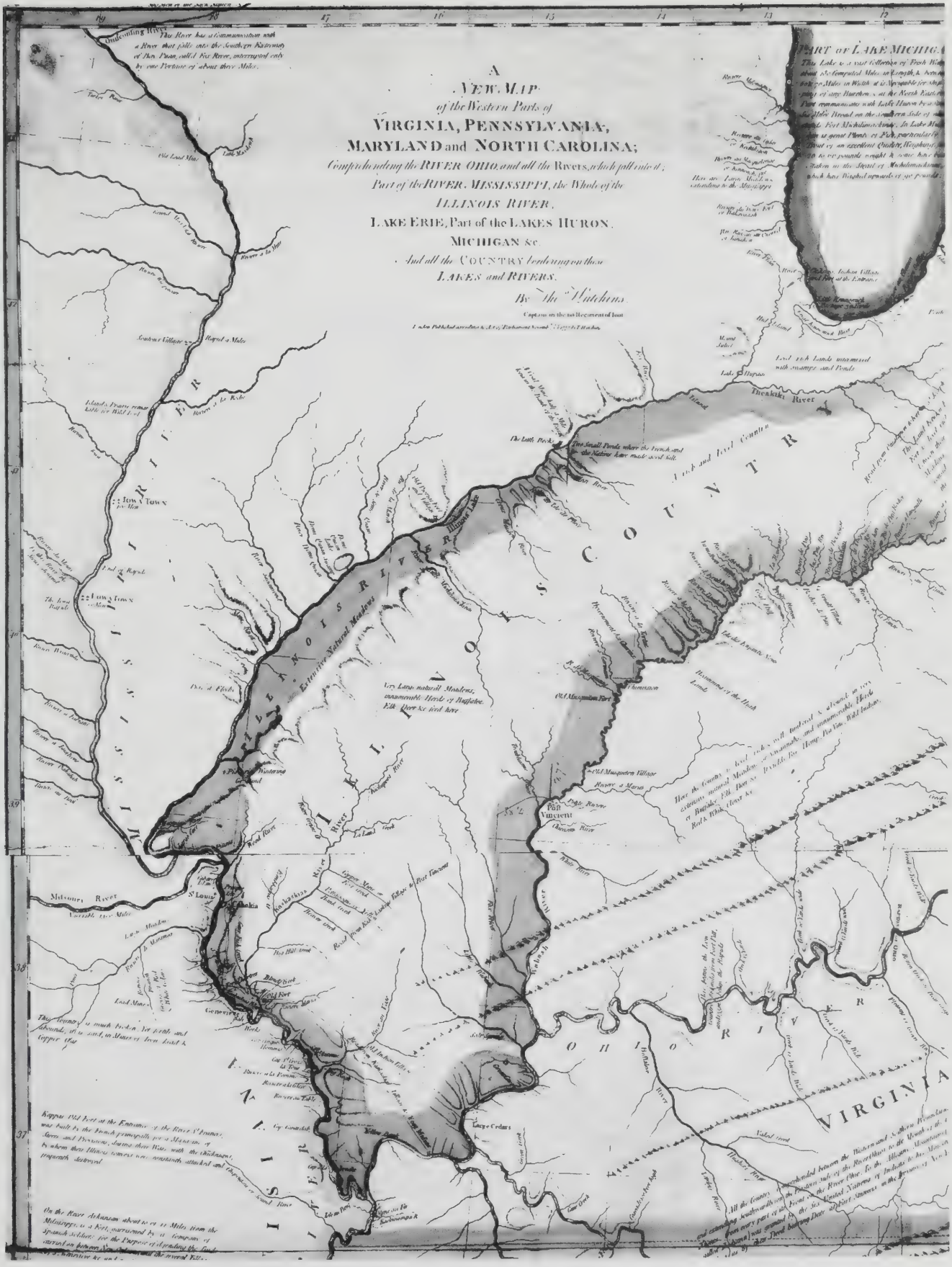

A
NEW MAP
of the Western Parts of
VIRGINIA, PENNSYLVANIA,
MARYLAND and NORTH CAROLINA;
Comprehending the RIVER OHIO, and all the Rivers which fall into it;
Part of the RIVER MISSISSIPPI, the Whole of the
ILLINOIS RIVER,
LAKE ERIE, Part of the LAKES HURON,
MICHIGAN &c.
And all the COUNTRY bordering on these
LAKES and RIVERS.
By Thos Hutchins
Captain in the 1st Regiment of foot
Taken Published according to Act of Parliament 1st March 1778 by Thos Hutchins
PART OF LAKE MICHIG
ILLINOIS COUNTR
ILLINOIS RIVER
Theakiki River
Illinois Lake
Extensive Natural Meadows
Very Large natural Meadows, unassimilable Herds of Buffalow, Elk, Deer &c feed here
Fort Vincent
Missoury River
St Louis
Genevieve
OHIO RIVER
VIRGINIA
Large Cedars
Kappas Old Fort at the Entrance of the River Wabash
On the River Arkansas about 60 or 70 Miles from the Mississippi is a Fort, garrisoned by 40 Spaniards

Figure 6. In this 1778 map of Illinois, Thompson Lake is shown as a circle labeled "Demi Quian Lake" (Tucker 1942).

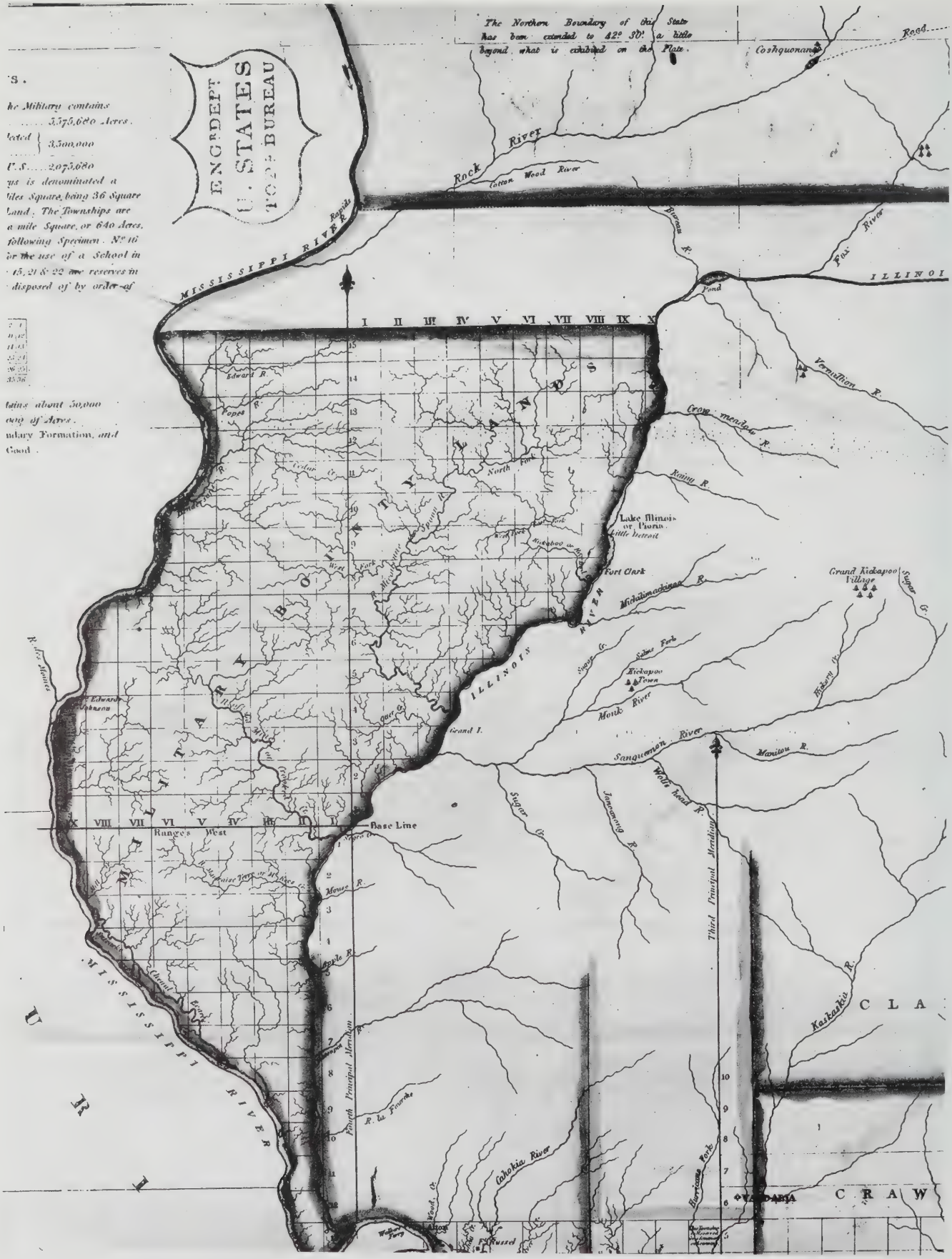


Figure 7. The Military Tract, which included Fulton County, was ceded by the Native Americans to the territorial government in 1816 (Tucker 1942).

> wagon roads intersect them generally, so they are easily entered on almost every side. The river is generally about three hundred yards wide with a slow current, and sloping banks. On each side, and back at convenient distance for hunting, lie about twenty lakes, sloughs and ponds, varying from three miles and a half, down to the ordinary pond. These, about ten on each side, stretch along from north to south, throughout the hunting grounds. The most prominent are Thomson's, Johnson's, Slim and Duck Island, in Fulton County; Flag, Spring, Mud and Clear in Mason County. Camps are generally pitched so as to command several of these lakes. Persons living in the vicinity will always conduct strangers to the best camping grounds, or haul their camp equipage to and from the same. Steamboats often land parties right on the ground, hence Peoria or Pekin, from the north, are good initial points, where perfect outfit for camp may be purchased. A small skiff or boat is almost indispensable, and there are few if any to hire. India rubber boots with high leggins, are a necessary article of outfit. Most of the game killed may be got by wading from the shore. The lakes are generally shallow, and some may be waded; some are open, but most are broadly belted with wild rice, flags, grass, etc. From about the 10th to the 20th of October is the best time to camp here. Shooting is generally along the borders, and a retriever will add much to the sport.

In 1898, a University of Illinois student named Wallace Craig gave a detailed description of Thompson Lake, Flag Lake, and the surrounding areas in his master's thesis, *On the Fishes of the Illinois River System at Havana, Illinois*. Thompson Lake was

> ...a large body of water, 5 miles long and half a mile wide, lying west of the Illinois and above Spoon River. It's maximum depth is about the same as that of Quiver Lake, but since the bottom slopes gradually to this depth from all sides, the greater part of the lake is very shallow, and the shore in many places is a swampy flat overgrown with flags and other forms of vegetation. The greater part of the lake, however, is comparatively free from vegetation. The bottom is mud almost everywhere, but sandy in places. The water is clear, except when the lake is invaded by the flood water of the River, when it becomes moderately turbid. Some spring water enters the lake, but much less than in the case of Quiver and Matanzas. This lake has three connections with the River: a principal one through Thompson's Slough, a narrow and comparatively deep channel about two miles in length which runs in a tortuous course from the north end of Thompson's Lake to the River [Figure 8]; an indirect one through the large swamp known as Flag Lake; and a third one through an artificial channel known as the "cut-road," passing straight across from the south end of Thompson's Lake to the mouth of Flag Lake Slough [Figures 9 and 11], which opens directly on the expanded portion of the River known as Havana Lake. The last two connections are closed at low water. It will be seen from the above description that Thompson's Lake, while similar to Quiver and Matanzas in most important characteristics, is different from them in its larger size, somewhat shallower water, smaller amount of spring water, and distance from the River—its outlet being a channel of considerable length (Craig 1898, 40–41).

In 1903, Charles Kofoid (Kofoid 1903, 151–156), of the Illinois Natural History Survey, described the Illinois River in the vicinity of Thompson Lake near Havana:

Figure 8. Thompson Lake was connected to the Illinois River by the upper inlet at its north end (Submerged and Shore Lands Legislative Investigating Committee 1911).

Figure 9. An artificial channel called the lower inlet connected Thompson Lake to the river at its south end (Submerged and Shore Lands Legislative Investigating Committee 1911).

A trip by boat across the submerged bottom-lands from the Quiver shore [on the east bank, 2.5 miles above Havana] to the western bluff in the latter part of May would be far more enlightening than any description that might be given. As we leave the sandy shore of Quiver we traverse the clear, cold, and spring-fed water along the eastern bank with its rapidly growing carpet of *Ceratophyllum* [hornwort], and in a few rods note the increasing turbidity, rising temperature, and richer plankton of the water which has moved down from the more or less open and slightly submerged bottom to the north. As we cross the muddy bank of Quiver ridge and enter the main channel of the river we find rougher water, caused by the wind which usually sweeps up or down the stream with considerable force between the bordering forests. The water also appears much more turbid by reason of silt and plankton, and no trace of vegetation is to be seen save occasional masses of floating *Ceratophyllum* or isolated plants of *Lemna*, *Wolffia*, or *Spirodela* [duckweeds]. Huge masses of cattle-yard refuse, veritable floating gardens, may also at times be seen moving down the channel or stranded in some eddy along shore. As we plunge into the willow thicket on the western shore we have to pick our way through the accumulated drift lodged in the shoals or caught by the trunks of the trees or the submerged underbrush. The surface of the water is one mat of logs, brush, sticks, bark, and fragments of floating vegetation, with its interstices filled with Lemnaceae [duckweed] dotted with the black statoblasts of *Plumatella* [bryozoans]. From this dark labyrinth we emerge to the muddy but quiet waters of Seeb's Lake [also spelled Siebs and Sebes] with its treacherous bottom of soft black ooze. We next enter a wider stretch of more open territory with scattered willows and maples and a rank growth of semiaquatic vegetation, principally *Polygonums* [smartweed]. The water is clearer and of a brownish tinge (from the diatoms), while mats of algae adhere to the leaves and stems of the emerging plants. A flock of startled waterfowl leave their feeding grounds as we pass into the wide expanse of Flag Lake. We push our way through patches of lilypads and beds of lotus, past the submerged domes of muskrat houses built of last year's rushes, and thread our way, through devious channels, among the fresh green flags and rushes just emerging from the water [Figure 10]. Open patches of water here and there mark the areas occupied by the "moss" of *Ceratophyllum*, as yet at some depth below the surface. The Lemnaceae are everywhere lodged in mats and windrows, and, amidst their green, one occasionally catches sight of a bright cluster of *Azolla*. The water is clear and brownish save where our movements stir the treacherous and mobile bottom. We now enter a second time the partially wooded country, and cross the submerged ridge to the sandy eastern shore of Thompson's Lake. This ridge is covered by submerged vegetation which has as yet attained but little growth. The "breaks" of the startled fish show that we have invaded favorite feeding grounds. The waters are evidently moving towards the river, and they bear the rich plankton of Thompson's Lake, while their turbidity is doubtless increased by the movements of the fish. Schools of young fry can be seen feeding upon the plankton in the warm and quiet waters. Thompson's Lake, the largest expanse of water in the neighborhood, is wont to be rough in windy weather, but if the day be still we can see the rich aquatic vegetation which fringes its margin and lies in scattered masses toward its southern end. Its waters seem somewhat turbid, but more from plankton than from silt, though the deep soft mud which forms much of its bottom is easily stirred. The slender transparent limnetic young of the gizzard-shad may be seen swimming near the surface. There is a perceptible drift to the south in the open lake, though this current is deflected by the elevated banks of Spoon River towards the Illinois River, crossing the lower bottomlands above this region. If we push on through the fringing willows at the south we find a series of open places locally known as "ponds." The warm still waters are turbid in places from the movements of fish, and at times we see the compact schools of young dogfish (*Amia calva*) and, if we are late enough in the season,

Figure 10. Flag Lake hosted rich beds of aquatic plants (Forbes 1897).

the myriads of young black, tadpole-like catfish (*Ameiurus*), likewise in schools, while young carp (*Cyprinus carpio*) are everywhere. The new vegetation is already springing from the decaying and matted stems of the preceding summer. Turning back towards the river we pass through the heavy timber where the still brown water, cool and clear, overlies the decaying leaves and vegetation of last season's growth, now coated with the flood deposits of the winter. Emerging again upon the river channel, we may find a turbid yellow flood pouring out from Spoon River, bringing down its load of drift and earth, and marking its course down the stream as far as the eye can see.

Contrast with the extent and variety of conditions at flood the limitations placed upon the stream at low water. Instead of unbroken expanse of four or more miles we find now a stream only 500 feet in width (at station E) [Figure 11], while the adjacent territory is dry land save where the sloughs, marshes, and lakes remain as reservoirs. Quiver Lake is now much reduced in width, and it may be choked with vegetation except in a narrow channel where the clear water shows little or no current. A half mile below we find the river water rushing in a narrow "cut-off" across the ridge of black alluvium into the lower end of the lake. The wooded banks which separate the river from Quiver and Seeb's lakes are now crowded with a rank growth of weeds and vines. The latter "lake" is reduced to a shallow stagnant arm of the river, whose warm turbid waters are foul with dead mollusks, and whose reeking mud-flats beneath the August sun shine green and red with a scum of *Euglena* [protozoan]. As we pick our way through the tangle of rank vegetation we come upon Flag Lake, now a sea of rushes. The discharge from this marsh to the river ceased in the early summer, and its margins are even now dry, with gaping cracks. Beyond the marsh we pass to the shore of Thompson's Lake to find its southern end choked with vegetation [Figure 12], though the greater part to the north is open water. The woodland and open ground to the south are now pastures and fields of waving corn. The only outlet to this large body of water, now somewhat reduced in area but warm, turbid, and rich in plankton, is

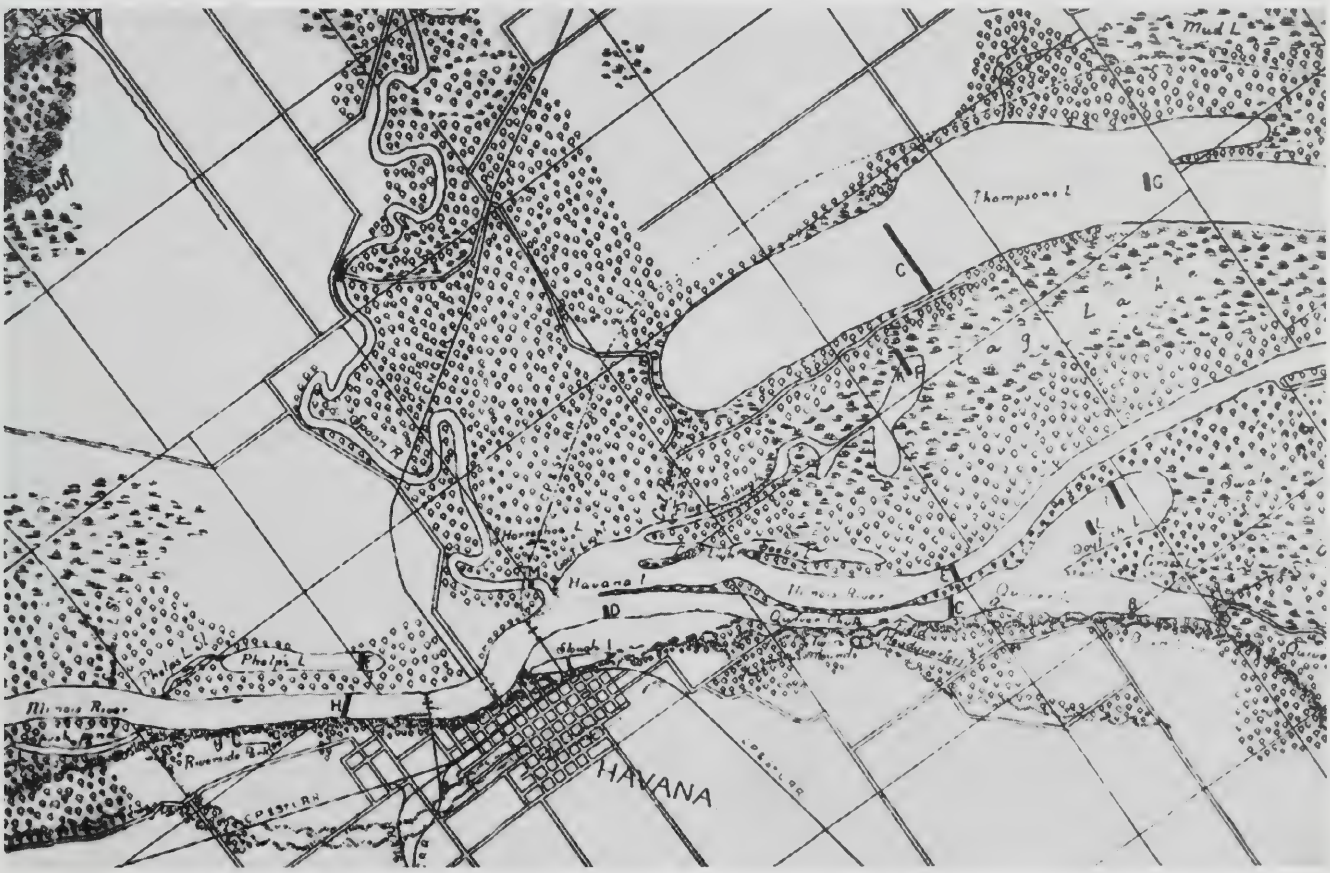


Figure 11. This drawing by Lydia Hart depicts Thompson Lake and the area surrounding Havana. Sampling stations established by early Illinois Natural History Survey scientists are noted (Forbes 1898).

a tortuous slough six miles to the north. The discharge, however, is in any case but slight, the lake being, indeed, not infrequently the recipient of river water. Spoon River still pours a sluggish but constant stream into the river, but save for a waterbloom of livid green (*Euglena*) its waters yield but little plankton. Thus, of all the wide area contributing to the plankton of the channel at high water there now remain only Thompson's and Quiver lakes and Spoon River, each much diminished in volume, but all diversified in character.

Returning now to the river itself we find a gently sloping bank of black mud, baked and cracked by the sun's heat, extending towards the softer deposit at the water's margin. A low growth of grasses, sedges, and weeds springs up as the water recedes. The river margin does not often have much aquatic vegetation. In low-water years, such as 1894 and 1895, a considerable fringe is formed along the shore, but this is quickly cleaned out on the seining grounds, which occupy a large part of the shore, as soon as the fishing season opens in July. In years of normal high-water the vegetation rarely gets much of a foothold along the shores, even at low-water stages. Save for the few sandy banks where springs abound, such as those below Havana along the eastern bluff, there is little, at least in the La Grange pool, to vary this monotony of mud banks and fringing willows. The backwaters have been reduced to the lakes, sloughs, bayous, and marshes which abound everywhere in the bottomlands. Many of these, as, for example, Phelps and Flag lakes, have ceased in their reduced condition to contribute to the river. Others, like Thompson's Lake, maintain a connection with the river by means of a long and tortuous bayou or slough through which the current flows in or out as the relative levels of the two fluctuate. This lake receives but little water from a few springs and creeks along the bluffs, and like many others in the bottom-lands serves only as a reservoir from which the water is slowly drawn off as the river falls, but when once the lower stages are reached its contributions cease. Still others, like Quiver and Matanzas, maintain direct and open connection with the river, and since they receive tributary streams they continue to feed the river, but in reduced volume. Though the number of tributary areas is thus much reduced at low-water stages, the individual peculiarities of the tributary waters in the bottomlands become more pronounced. As each one loses its connection with the general flood it becomes a separate unit of environment, with its local differences in those factors which determine the character of the plankton developing in its waters. The resulting contributions may thus differ greatly in amount and component organisms, and accordingly tend to diversify the river plankton of low water to a degree even more marked than that of high water.

Figure 12. The south end of Thompson Lake was often covered with vegetation as shown in this 1894 photo (The Karl Collection).

Ross Stufflebeam (pers. commun. 1987), a resident of the area, recalled: "...it [Thompson Lake] was beautiful. It was just as nice...it was blue. We called it Blue Lake and that water was blue. It didn't look like most of the water is now. When it rained that water was just as pretty and blue out there...it was really pretty. And everybody just loved that lake." He also remembered (Ross Stufflebeam, pers. commun. 1987):

> "...there was woods all around that lake [Thompson Lake]. They had pecan trees, and oh they'd have the nicest pecans on them in the fall. My dad and my brother, they used to go out there and them pecans weren't out there in the lake but the lake could get up around once in a while but it didn't bother them. They'd go out there in the fall and gather just gallons and gallons of pecans right along that lake there."

The Heyday of Thompson Lake and the Illinois River Valley

Thompson Lake was named after Nathan Thompson, an early settler of a two-mile square of prairie in Waterford Township that joined the lake (Esarey 1993). Thompson Lake was partially surveyed by the U.S. Government in 1817 and 1827 and finally in 1842 (Charles et al. 1915)[1]. Using the elevation of water surface of Thompson Lake on the United States Survey, the area of the lake was reported to be approximately 1,740 acres (Submerged and Shore Lands Legislative Investigating Committee 1911). Forbes and Richardson (1919a, 141) mentioned that Thompson Lake increased an average of 3.6 feet in summer depth from the diversion of Lake Michigan water from 1900 to 1907 and, as a result, the summer expanse of the lake averaged 1,943 acres before 1900 and 5,072 acres afterward, an increase of more than two and a half times. It was part of a chain of lakes in which, with adequate water levels, a person supposedly could row a boat from one lake to another for nearly 30 miles (Stufflebeam 1968).

Thompson Lake soon became known as "the most famous and useful breeding ground for the various fish that abound in the Illinois River, and also a wonderful feeding ground for ducks while pursuing their migratory flights...." (Submerged and Shore Lands Legislative Investigating Committee 1911, 170). Thompson Lake produced about 300 pounds per acre per year of fish and spawned enough young fish to stock all the surrounding waters (INHS files). The commercial catch of fish in the Illinois River rose steadily after 1894 reaching a peak in 1908 (U.S. Department of Commerce and Labor 1911). Forbes and Richardson (1919a, 150) noted that "in 1908 more than half the fisheries of the state and nearly two-thirds of the capital employed in fishing were on the Illinois River." In their report to the Rivers and Lakes Commission, Alvord and Burdick (1919:13) stated "that the fishery of the Illinois River is more valuable than that of any other fresh-water river fishery in the United States and is exceeded only by the Great Lakes and the salmon industry of the Pacific Coast. The value of the catch of the fishermen amounts to 62 per cent of the fish product of the state and 10 per cent of the production of the United States." These statistics did not include the fish taken for private use. It was estimated in 1915 that the money spent in the local river communities by sportsmen was equal to that produced from commercial fisheries (Jenkins, Merchant, and Nankivil and Walraven 1950).

[1] The lake was officially located "upon sections 27, 28, 32, 33, and 34 of township five north, range four east of the fourth principal meridian, Fulton County, Illinois, and in sections 4, 5, 8, 16, 17 and 20, in township four north, range four east of the fourth principal meridian, Fulton County, Illinois" (Submerged and Shore Lands Legislative Investigating Committee 1911:170).

Many years after a fishing excursion on Thompson Lake, Walter Hatton recalled (pers. commun. 1987):

> I imagine...on the hook and line, we caught bass that would weigh between 5–6 lbs and yellow perch, we called them a ringtail perch...they were a very beautiful fish...they had orange fins and sort of a diagonal dark [stripe]...the fish itself was sort of a grayish green and it had regularly spaced diagonal stripes across it....They are an excellent eating fish too...And they were up there for many years... (Walter Hatton, pers. commun. 1987).

Some claimed that Thompson Lake was the Inland Fishing Capital of the World and, as a result, Havana became known as the Fishing Capital of the Illinois River (Oswalt 1972). Floating fish markets lined the river at Havana (Figure 13). Howard White (pers. commun. 1990) recalled:

> ...that was an interesting place for a kid to go, if they let you on the boat. They'd make a big fish haul. They loaded the fish in what looked like a boat that was slatted...a live box they called them, and then they'd fill that live box up and tow it from wherever they caught the fish along the river down to the fish market. The fish markets had a...not a barge...but something like it; they'd pull the live box up and then with long handled dip nets they'd open the top of that and start dipping them out and putting them in the holding tank...for want of a better word to call it...so that they could again seine them out of that and dress them for market.

There were 64 commercial fishermen residing in Havana in 1900, 71 in 1910, and possibly as many as 200 fishermen within a 10-mile radius of Havana in 1904 (Thompson 2002, 174) (Figure 14). Between 250 and 350 of Havana's residents were involved in the fishing industry in 1915 (Thompson 2002, 174).

Figure 13. Floating fish markets lined the river in the early 1900s at Havana, once known as the "Fishing Capital of the Illinois River" (Courtesy of William "Bill" Watts).

Figure 14. Fishermen enjoyed abundant catches from the Illinois River and its backwater lakes (The Karl Collection).

Havana shipped more fish than any other town on the lower river (19% of the total river trade) (Thompson 2002, 174). As many as 100 train carloads of fish were shipped from Havana each year and in 1907 commercial fishing provided about half the town's income estimated at $100,000. The market demand existed over a large part of the country. Howard White (pers. commun. 1990) recalled: "...they went to Chicago, but ...mostly they went to eastern markets like Philadelphia, Baltimore, Boston, New York...." In 1908, 12 million pounds of fish harvested from the Illinois River and its attendant lakes were shipped from markets in the Havana area (Oswalt 1972). Walter Hatton (1988, 134) recalls that one fish market had

> ...a special truck with a 2-wheel trailer fastened right on the bumper, and a bed about four feet wide, six feet long, and two feet high. Its end gate loosened up and turned down. They made that big haul in real cold weather, fishing through an open place in the ice. By the time they got back to the fish market, that whole bunch of fish had frozen to one solid cake of ice in the trailer. They were as white as a sheet of paper. The men backed up the trailer, opened the lid on one of the liveboxes, and threw in some water out of the river. It was a little warmer, and loosened that ice around the edges. They worried with it for a while, and then slid the whole cake out into the livebox. Within half an hour, those fish were down there swimming around as big as you please. It didn't hurt them one bit.

The biggest fish catch the local fishermen ever made was a seine haul of 272,000 pounds of carp and buffalo taken from Flag Lake (Hatton 1988). Seine hauls by commercial fishermen are reported to have been as high as 125,000 pounds from Thompson Lake in a single day (Watters 1987). "During this period, expert fly or bait casters frequently brought in a tubful—about 100 pounds—of bass in an afternoon. Bass were so abundant that a ton and a half were taken at a time in a seine in Thompson Lake; and hundreds of barrels of them were shipped contraband, with or without the knowledge of the state wardens" (INHS files).

Ice blocks were cut from the frozen lakes in the winter and stored in block houses insulated with sawdust (Figure 15). The ice would keep most of the year and was used to pack the fish and game shipments for market (Oswalt 1972).

Tales of exciting hunting expeditions served to attract waterfowl hunters to the area. An 1893 (Strode 1893, 88–89) account tells about one party's experiences at Thompson Lake:

> We were back in the timber about 200 yards from the edge of the lake, but could see glimpses of the water glistening through the trees. The noise and fuss of the water fowl we could plainly hear. Going out where we could have an unobstructed view we were surprised at the great numbers of water fowl. There were simply square acres of the lake's surface,

Figure 15. Ice blocks cut from the frozen lakes and river in the winter were used to pack fish and game for shipment to market (The Karl Collection).

covered with Ducks, Geese and Brant. Lower down and at the water's edge on the opposite side there was a little flock of a half dozen Pelicans. They loomed up so large in the reflection of the setting sun that they appeared like small white boats, floating on the lake.... The report of the guns, as it reverberated over the water, caused thousands of Ducks and Geese to take to wing; the air was black in every direction with great circling flocks. Dropping down in the thick flag my opportunity soon came, and as a big flock of Mallards came circling over me, I arose to my feet, and bang! bang! each report followed by a Duck tumbling headlong to the earth.

Jim Paul of Peoria (Ehresman 1990) recalled:

In 1916, I started fishing and hunting Thompson, Flag and Siebs lakes. The water was so clean we could drink from it, and so clear we could see fish before they bit. If they were small fish, we would just move the bait away from them.

Flag Lake was the best duck hunting lake because it had much more vegetation than the others. On one very bright, sunshiny day, I was hunting on Flag Lake. There were thousands and thousands of ducks on the water. Somebody scared them, and when they took flight, they were so thick they completely shut out the sun....

There were no outboard motors in those days, so I got up at 2 a.m. in the morning to row about four miles all the way up to Flag Lake to shoot ducks. If we had high water in the fall, I would row across the south end of Thompson Lake into Round Prairie, just a big hole in the timber which was good in high water. When I was around 14 years old, I used to quit my job at the old File Cutlery Co. in Havana at the beginning of duck season and go back to work there when duck season ended.

Hunting season brought hunters from Chicago, Peoria, and other Illinois towns as well as from out of state to the Havana area. President Benjamin Harrison visited Havana to hunt waterfowl (Boyce and Gillam 1976, 29) (Figure 16). In 1909, Indiana Governor Durbin and his son visited Havana for a week-long hunting trip (Boyce and Gillam 1976, 29). Leo Borgelt (1973) worked on the C & IM railroad and tells of transferring "steamer trunks from the Havana-Jacksonville branch to the main line loaded with dead ducks, that sometimes four men could not do the job. I have seen blood running from those trunks, and saw the hunters they belonged to also transfer to the main line. One fellow left Havana twice a week with 500 ducks each time for Chicago."

Figure 16. President Benjamin Harrison, standing in the bow of the steam tug, came to hunt in the Havana area in 1894 (Courtesy of Marcia Walker).

Hunting was an important sport not only for nonresidents, but residents as well. As Oscar "Rough" Warren (pers. commun. 1987) recalled: "You know what I always wished? That I'd have kept track of what ducks I killed in my life time and showed it to people today. They wouldn't believe it...50 or 100 ducks a day." Howard White (pers. commun. 1990) reminisced: "My mother always said that when that time of year rolled around she was a duck widow. They had blinds on the river, on the surrounding lakes, and out in the fields. We would be examining the—what my dad called the 'sky parade,' just string after string of ducks just about sundown. They would just pile out there. A beautiful sight" (Figure 17). Walter Hatton (pers. commun. 1987) once recalled: "...sometimes you could take your boat and find a place where two or three stumps grew pretty close together and just sorta wedge the boat in there and put out some wood decoys and the ducks then would what we called trade—they would fly from one body of water—from Flag Lake over to Thompson. They just kept a steady stream of them, coming and going...."

The hunting in the area was so important, that on occasion, some of the sportsmen's tales made the newspapers. On November 15, 1877, the *Fulton Democrat* reported that "Last week was remarkable hunting among the hunters of wild fowl in this vicinity. Thompson's Lake was all alive with ducks of the various species, and the cold, wet weather rendered them almost wholly oblivious of the presence of the hunters. A natural result was that thousands of them were killed." On November 9, 1882, the *Fulton County Democrat* (1998) noted that "Hunters report shooting most excellent at Thompson's Lake, and larger numbers of hunters are there than in any previous season. There is a surprising amount of recreation and rest in this sport, where a number of days are given to it. Many parties have erected permanent shanties at different

Figure 17. The luxuriant, plentiful resources of the backwater lakes attracted thousands of waterfowl to the area (Photo by R. Kendrick).

points on the lake, while others carry tents with them. Some of the parties remain out from two to four weeks." On February 27, 1891, the *Mason County Democrat* mentioned that "Postmaster Krampff reports that 10,000 canvasback ducks were in Thompson Lake Tuesday."

In October 1886, the editor of the *Fulton Democrat* (Clancy 1999) noted that he spent a pleasant afternoon with the Pricketts at Thompson Lake and that "it was a lovely sheet of water, one mile wide by five miles long, and is well supplied with noble fish. In their season it is also the rendezvous of multitudes of wild fowl. It is hoped at no distant day that Thompson's Lake may be fitted into a most attractive resort. A dike leading across the bottom, a wharf, a few camping cottages, sheds for horses, and a few yawls and yachts would make the lake a very delightful resort."

Towns and villages located in the vicinity of Thompson Lake profited from its rich resources (Figure 18). Waterfowl hunters and tourists as well as fishermen were attracted to the area (Figure 19). At about the turn of the century, the small village of Liverpool was reported to have had four hotels with one month's income amounting to about $70,000 (Figure 20). The village also had two dance halls, a movie theater, a steamboat landing, and a grain elevator (Stufflebeam 1968; Lorriane Riley and Oscar "Rough" Warren, pers. commun. 1987). There were 50 guides to show hunters where to shoot the 77,000 shells that were sold in Liverpool in one hunting season (Stufflebeam 1968). Thompson Lake was the largest lake in connection with the Illinois River, and for many years was a favored resort (Submerged and Shore Lands Legislative Investigating Committee 1911). Many people utilized its benefits by having summer cottages to spend their time hunting and fishing (Oscar "Rough" Warren, pers. commun. 1987) (Figure 21). As was written in the *Mason County Democrat* in 1925 (Boyce and Gillam 1976, 30), "The population in Havana and vicinity will increase by several thousands within the next week. The summer season is upon us and the 'great playground of Central Illinois' is beckoning pleasure seekers from the cities."

Who Owns Thompson Lake—Public or Private?

Such a lucrative resource was not without its problems, and controversy developed over ownership

Figure 18. Havana was one of the towns that profited from the resources of Thompson Lake (in background) and the Illinois River. Fish markets were numerous and excursion boats made regular runs to Peoria (Forbes and Richardson 1913).

Figure 19. Waterfowl hunters display their harvest after a successful day along the Illinois River (Courtesy of Howard White).

Figure 20. The Island Inn in Liverpool, Illinois, was a popular place in the early 1900s for many tourists, hunters, and fishermen who visited the area (Courtesy of Lorraine Riley).

and access to Thompson Lake. Traditionally, residents of the Illinois River valley used the lakes, sloughs, and marshes as a commons to which they had free access for hunting and fishing. They came and went as they pleased even though most of the land and waters had been deeded to someone. However, by the early 1900s as natural resources began to dwindle and farmers started investing in the drainage of these areas for agricultural purposes, landowners asserted their private rights for the first time, denying open access (Schneider 1996).

Isaiah and Nicholas Prickett settled in Fulton County and eventually acquired much of the area adjoining Thompson Lake sometime after 1850 (Esarey 1993). They operated the grounds as a hunting and fishing resort. A story in the October 2, 1891 issue of the *Mason County Democrat* stated that "the suit of Isaac [sic.] Prickett against the Fifers and others for fishing in Thompson Lake was decided Wednesday in favor of the fishermen. This seems to substantiate Attorney Brown's position that it is not a criminal offense to fish in Thompson and other lakes of the kind, though there still may be an action for actual damages sustained." In a letter to the editor in the same issue, Attorney I.R. Brown attempted to clarify the issue with "The suit mentioned was instituted by the landowner to recover a penalty against the Fifers for fishing on his land without his consent. What we do say is that such a suit will not lie for fishing in Thompson Lake or any other lake in the state of Illinois, directly connected with any public body of water, as Thompson Lake is by the slough with the Illinois River. A suit for civil damages would be the proper remedy. However there are many other questions involved in piscatorial rights to a riparian owner which we do not feel called on to discuss."

Figure 21. Summer visitors utilized houses such as this one at Thompson Lake photographed in 1896 (Photo from Mrs. John Depler, courtesy of Curtis Strode).

In 1897, the *Mason County Democrat* (Boyce and Gillam 1976, 29) reported that "the papers were made out that changed the ownership of Thompson Lake from Isaiah Prickett to William Fitzhenry and Harvey McCumber. The lake contains 1,838 acres and the consideration was $15,000." The fishing and hunting operation was continued (Depler 1973).

In 1901, a group of influential businessmen from Indianapolis and Terre Haute, Indiana, purchased Thompson Lake and leased other parcels of land between Liverpool and Havana encompassing 3,400 acres and subsequently formed the Thompson Lake Rod and Gun Club. Joy Morton, the Chicago founder of the Morton Salt Company and son of the founder of Arbor Day, visited the club and became a member. Morton began to buy shares from other members of the club. Also referred to as the Indianapolis Rod and Gun Club, the Thompson Lake Club was incorporated in 1902. A clubhouse was constructed on the west side of the lake (Figures 22 and 23) . It stood on brick piers several feet off the ground and generally was above flood waters. However, on July 5, 1902, water came 10 inches over the floor; on March 20, 1903 it was within 18 inches of the floor (Oswalt 1972).

The club register, which covered the years of 1901 to 1923, contained information on hunters, dates, and the numbers and species of ducks harvested. L.C. Cline and John Wright of Indianapolis were consistent in recording their bag limits. John Wright harvested 353 ducks from October 1 to December 11, 1906 and 107 ducks during September 12–19, 1908. L.C. Cline shot 75 ducks (Mallards, Teals, Northern Pintails, and Lesser Scaups) during November 23–25, 1909. Cline had his best three-day shoot during the spring of 1913 when 94 ducks fell to his gun. A typical daily harvest per hunter averaged between 20 and 30 ducks throughout the club's history. J.C. Penney was a guest at the club on October 2, 1904 (Figure 24).

After incorporation, the club attempted to lay claim to its title of the lake bed. Notes in the club register show continual "trespassing with intent to hunt" by local hunters and seining in the waters of

Figure 22. The Thompson Lake Rod and Gun Club clubhouse was constructed on the west side of the lake and rested on brick piers to protect it from flood waters (Courtesy of Curtis Strode).

Figure 23. An eastward view of Thompson Lake is shown from the Indianapolis Rod and Gun Club clubhouse, ca. 1915–1920 (Parmalee and Loomis 1969).

Thompson and Flag lakes by fishermen from nearby communities.

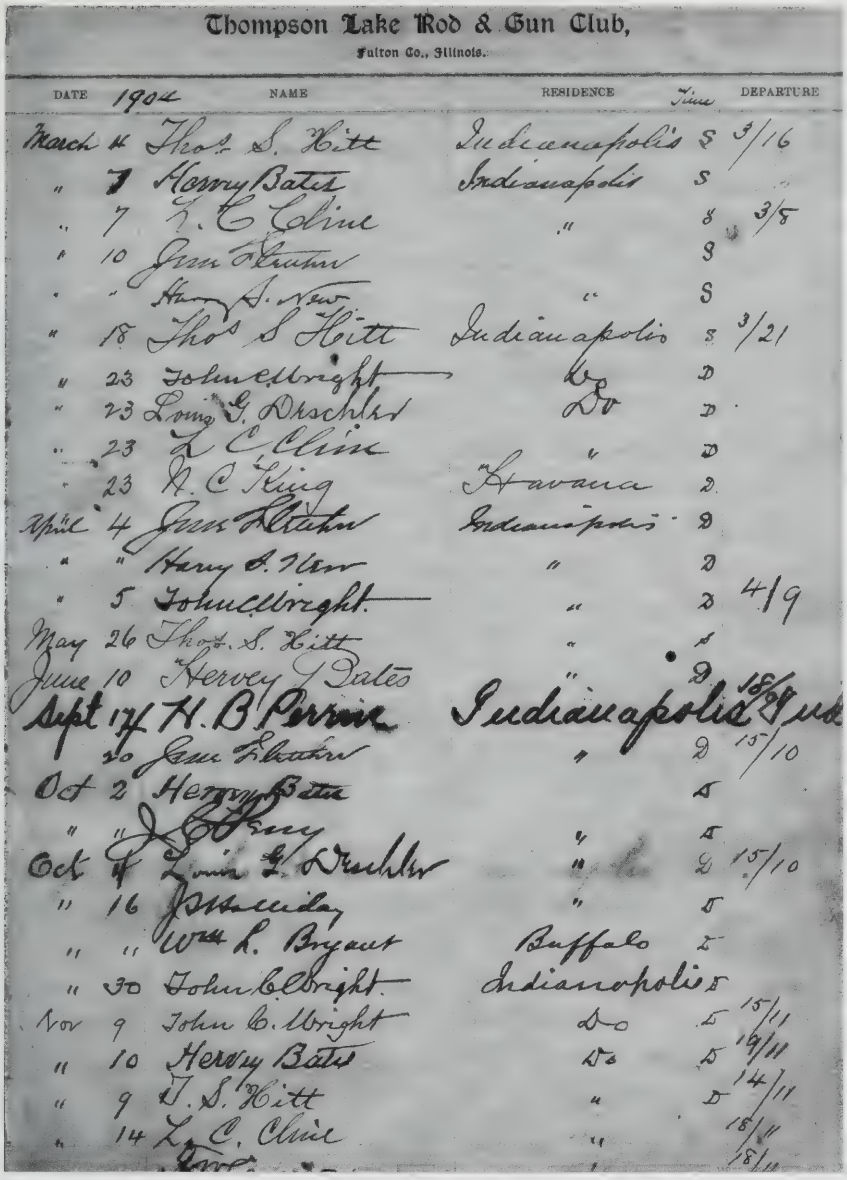
> As owners, the Indianapolis Rod and Gun Club immediately experienced difficulties with professional fishermen (seiners) and wholesale hunters. Twice they applied for injunctions to declare the lake private property but the professional fishermen and hunters represented by attorney B.M. Chipperfield defeated the injunctions. After the second defeat, Chipperfield went to the club members and is reputed to have said, "Why in hell don't you hire a really good lawyer and win this case?" This they did by hiring B.M. himself to act as their attorney and so the injunction was easily secured at the next session of court. But they found that it took more than an injunction to keep the poachers out. Armed guards were hired to patrol the lake and the surrounding grounds. Tempers flared and there were many encounters and gun fights between the guards and the trespassers (Depler 1973, 272–273).

Newspapers from Lewistown and Havana often carried stories of the conflict. In March 1907, a warden for the club attempted to arrest William Cobb for poaching. When Cobb fired five shots at the warden, he returned a volley hitting Cobb in the hand, which had to be amputated. The conflict was attributed to "bad blood that is stirred up by the purchase of the huge tracts of hunting and fishing grounds by the hunting clubs and the closing of the grounds to the hunters and fishermen who have been accustomed to roam the lakes and hunt and fish at pleasure" (*Fulton County Ledger* 1907, *Mason County Democrat* 1907). In 1908, Cobb was sentenced to 60 days in the Peoria workhouse for poaching (*Lewistown Evening Record* 1908).

Juries were usually sympathetic to the hunters and fishermen. Law officers, including the Chief of Police of Havana, poached on the grounds of hunting clubs. Since market hunting and fishing were the livelihood of many local people, the practice was not regarded as a crime. A 1908 account in the *Mason County Democrat* reported that two men were arrested; one was "the only support of a large family" and the other was "taken away from a sick wife and it is good that both were able to return to their people."

The perpetual question of whether the lake was navigable and, therefore, public, or whether it was private property was central to the controversy between gun club members and local hunters and fishermen. The courts indeed determined that the lake was a navigable body of water in connection with the Illinois River, thus placing ownership with the State of Illinois and opening the lake to public use (Submerged and Shore Lands Legislative Investigating Committee 1911). In a letter dated May 5, 1915 to Governor Dunn (Charles et al. 1915, 138–139), the Rivers and Lakes Commission submitted their findings on the "public character of Thompson Lake."

> It appears that the inlet and outlet known as the Thompson Lake slough and the 'cut road' have existed for all time as a connection between the lake and the Illinois River; that the upper inlet, or Thompson Lake slough, has always been deep enough and wide enough to permit craft of various kinds, including steamboats drawing as much as 4.5 feet of water, to enter the lake, and that during low water stages commercial craft could navigate in Thompson Lake when they could not do so in parts of the Illinois River. Our investigation of Thompson Lake causes us to believe that the attempt of Harry S. New, Alexander C. Ayers et al., the respondents who claim title to the bed of this lake, has been from its inception an attempt on their part to take from the people of the State of Illinois a large tract of valuable public property without compensation and to destroy a great industry, namely, propagation of fish life, for the purpose of draining the lake and converting it to their own


Thompson Lake Rod & Gun Club,
Fulton Co., Illinois.

DATE	1904	NAME	RESIDENCE	Time	DEPARTURE
March	4	Thos. S. Hitt	Indianapolis	S	3/16
"	7	Harry Bates	Indianapolis	S	
"	7	L. C. Cline	"	S	3/8
"	10	Jas. Keating		S	
"		Harry S. New	"	S	
"	18	Thos. S. Hitt	Indianapolis	S	3/21
"	23	John C. Wright	Do	D	
"	23	Louis G. Dischler	Do	D	
"	23	L. C. Cline	"	D	
"	23	H. C. King	Havana	D	
April	4	Jas. Keating	Indianapolis	D	
"	"	Harry S. New	"	D	
"	5	John C. Wright	"	D	4/9
May	26	Thos. S. Hitt	"	S	
June	10	Hervey J. Bates	"	D	15/10
Sept	17	H. B. Perrin	Indianapolis	D	15/10
"	30	Jas. Keating	"	D	
Oct	2	Harry Bates		S	
"	"	J. C. Penny	"	S	
Oct	4	Louis G. Dischler	"	D	15/10
"	16	J. Sheridan	"	S	
"	"	Wm. L. Bryant	Buffalo	S	
"	30	John C. Wright	Indianapolis	S	
Nov	9	John C. Wright	Do	S	15/11
"	10	Harry Bates	Do	S	16/11
"	9	T. S. Hitt	"	D	14/11
"	14	L. C. Cline	"		16/11
					15/11

Figure 24. The Thompson Lake Rod and Gun Club register records that J.C. Penny hunted at the club on October 2, 1904. Harry S. New, Chairman of the Republican National Committee and U.S. Senator from 1917–1923, signed in on April 4, 1904 and often hunted at the club as well (Register courtesy of Doyle Parsley).

private ownership and use. These parties have sought to prevent the commission, on two different occasions, from investigating the public character of this lake.

We, therefore, in consideration of all the facts and circumstances in connection with the public character of Thompson Lake, conclude that the people of the State of Illinois have great rights and interests in this lake; that its integrity as a public body of water should be preserved, and in view of the litigation between the parties and the great importance of the same...we recommend that the proper officers of the State institute promptly the necessary legal proceedings to quiet the title of the people of the state of Illinois to the land over which said lake flows, or to institute and take such other action as may be deemed to be proper to protect the rights and interests of the people of the State of Illinois in said lake.

New and Ayers mentioned in the preceding quote were members of the Thompson Lake Rod and Gun Club; New was Chairman of the Republican National Committee and U.S. Senator from 1917–1923 (Thompson 2002, 184). Furthermore, Charles et al. (1915, 137) wrote: "It appears from the testimony that as far back as the memory of one of the oldest living men in the vicinity of Thompson Lake, or Fulton and Mason counties, that it was used for commercial navigation for many years. Products and freight, such as grain, horses, cattle, wood, coal, and building material, were shipped from the west side of the lake to one of the inlets of the river and thence to Chicago, Peoria, Pekin and Havana; also to St. Louis, Missouri."

A petition by those who wanted exclusive possession of the lake was filed on June 7, 1915 to organize a drainage and levee district of the lands embodying Thompson Lake, the Thompson Lake Drainage and Levee District. However, on July 1, the matter was brought into the courts when a bill filed charged that the lake and its connecting channels were navigable, had been for many years, and that the lake had been a public fishing area until the past few years; therefore, the title should be in the trust of the people of the State. The Illinois Supreme Court ruled in favor of the drainage and levee district in October 1917 (State of Illinois 1917). The largest lake in the valley, although previously determined navigable and publicly owned, was now legally declared private property and subject to drainage.

Attorney's fees and court costs associated with the declaration of private ownership were $45,845 (Thompson 1989). The cost of clearing and draining 5,400 acres was estimated to be about $80 per acre (Pickels and Leonard 1921). In 1919, a contract to drain the lake was awarded to Edward Gillen Dock and Dredging Company of Racine, Wisconsin, by the commissioners of the Thompson Lake Drainage and Levee District (Boyce and Gillam 1976) (Figure 25). The construction of a 13.5-mile levee enclosing the district began

(Mulvihill and Cornish 1929). Inflation rates were costly. "Work that was expected to have required an assessment of $398,875 upon the land in 1918, required another $92,073 of construction assessment in 1922" (Thompson 1989, 352). Apparently, Morton offered to sell 7,000 acres of the Thompson Lake property to the City of Havana for $85,000 in 1920 and 1921, but the city declined the opportunity (F.D. Loomis, pers. commun. 1991).

In 1919, a committee was appointed by the board of directors of The Friends of Our Native Landscape to investigate lands in Illinois that should be preserved; the committee recommended that "the whole shore line of the Illinois River, extending for nearly a hundred miles, from Peoria to the mouth of the Sangamon River, should be preserved either as a State Park or included in the proposed forest preserve system." (Friends of Our Native Landscape 1921, 65–66) It is interesting that 50 years later in 1969, the Illinois Department of Conservation proposed an Illinois River Corridor for recreation to preserve, protect, or restore the backwater lakes, sloughs, and bays along the river, and to acquire large tracts of land along the river for ultimate development into parks, refuges, and conservational areas, in order to afford the public access to the river (Illinois Division of Waterways 1969).

Other changes that affected floodplain hunting and fishing grounds were taking place in the Illinois River system. Beginning in 1900, water eventually reaching 10,000 cubic feet per second was diverted from Lake Michigan into the Illinois Waterway. As a result, the acreage of ponds, sloughs, lakes, and marshes in the floodplain between Utica and Grafton doubled from approximately 55,000 to 111,000 acres (Bellrose et al. 1983). Lake Michigan water not only flooded thousands of acres of bottomland trees killing mast-producing species, such as pin oaks and pecans, important as food sources for wildlife, but the diversion also delivered industrial and sewage pollution from Chicago to the waterway. Many water areas previously separated by stands of bottomland forest merged into larger bodies. Forbes and Richardson (1919a, 140–141) reported an average water level rise of 2.8 feet at Havana as a result of diversion; moreover, during the critical growing season of June through September, levels rose an average of 3.6 feet above prediversion elevations. From 1903 to 1922, 38 organized drainage and levee districts, including the Thompson Lake Drainage and Levee District, encompassed about 188,000 of the 333,000 acres (56%) of the floodplain between LaSalle and Grafton and eventually converted them to agricultural land while draining about 43,450 acres (39%) of the existing water surface (Bellrose et al. 1983). "In the lower one-third of the river, farm land levees by 1914 had reduced the width of the floodplain by about 80 percent and had reduced the cross section of the flowing stream in a great flood to about 25 percent of the cross section available in 1904" (Jenkins, Merchant, and Nankivil and Walraven 1950, 23). The levees constricted the river so that, although flows were similar, water levels were about 10 feet higher at Beardstown during the flood of 1943 than those in 1904 (Jenkins, Merchant, and Nankivil and Walraven 1950).

Figure 25. In 1919, the Edward Gillen Dock and Dredging Company was contracted to drain Thompson Lake and work began soon after (The Karl Collection).

A Farm is Created

One of the final entries in the Thompson Lake Rod and Gun Club register written by Joy Morton included: "April 26, 1923—The day we decided upon the final plan for Thompson Lake Farms" (Figure 26). This entry signified the end to the bottomland lake considered the most productive with respect to fish and wildlife populations in the Illinois River valley. About that time on April 13,1923, The *Mason County Democrat* (Oswalt 2003) reported, "Take your last look at Thompson Lake. Soon it will be a large area of farm land. For several years they have been working on building the levee. The lake will not be there very long." On May 15,1924, J.D. McHose of Havana wrote a letter to R.E. Richardson, a biologist at the Illinois Natural History Survey Field Station located near Thompson Lake (McHose 1924). McHose's letter included the following: "We have all the water out of Thompson Lake now. We were delayed in pumping it all out on account of the fish. They got out 600,000 pounds. The rest died (twice as many)" (Figure 27).

Thompson and Flag lakes and their surrounding environment were gone; their lake beds soon became farmland and their forests and aquatic plants were replaced with agricultural crops. The first cultivation on some of the 5,400 acres was done in 1924 by Grover Post (Oswalt 1972, Thompson 1989). Post's widow recalled: "Was it ever a problem!" (Oswalt 1972, 5). Post and two hired hands farmed 300 acres of the farm using eight mules. Over 200 acres of rice were planted in 1925 and yielded 45 bushels per acre (Thompson 1989).

The *Mason County Democrat* reported in 1925 (Boyce and Gillam 1976, 29) that "The Illinois River,

which in ye olden days was the main artery for shipping has seen many strange cargoes. Saturday the strangest landed here. It was a barge, loaded to the guards with rice, bound for the New Orleans market. It came from Thompson Lake Farms, operated by Joy Morton, Chicago financier." The newspaper also reported in 1925 (Boyce and Gillam 1976, 29) that "there was a fire burning in what was Thompson Lake opposite Havana. Farmers were burning stalks from the field, preparing to put in a crop. Strange sight for the old timers to see flames where so recently was a large body of water."

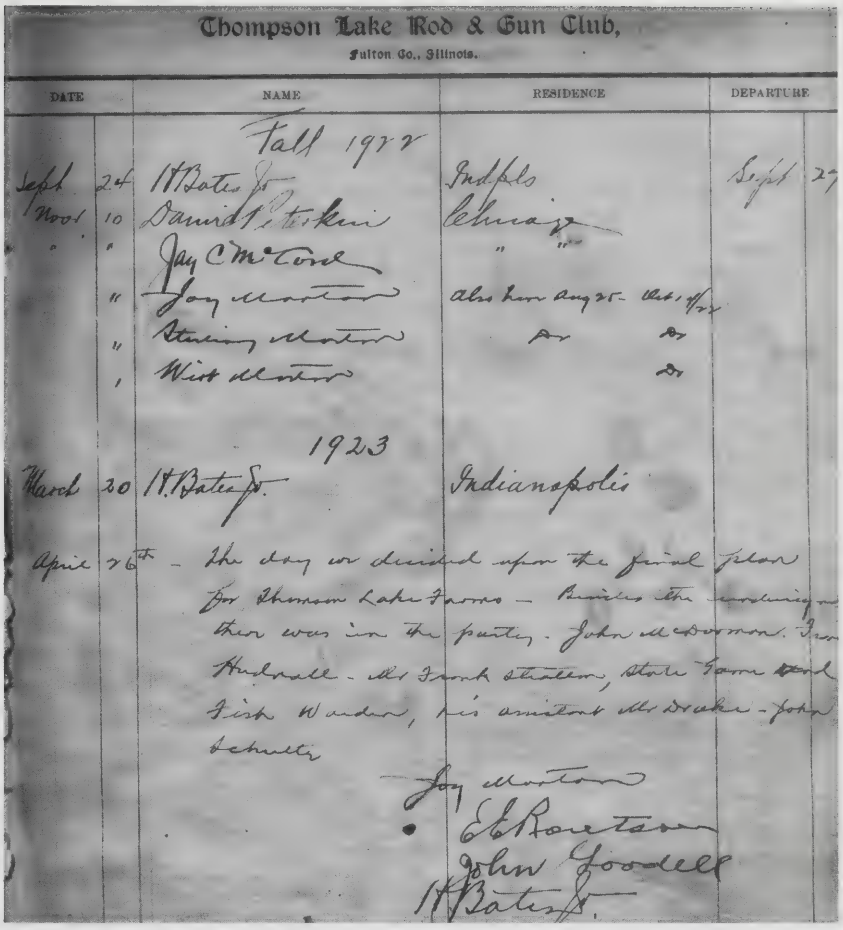
Bad feelings were common among the residents of the area and were prevalent for many years. Howard White (pers. commun. 1990) recalled: "I can remember almost without exception every time we had a good high water situation, which the first one was in 1925 and 26, you continually heard people say, well somebody ought to go over there and dynamite that levee."

The Thompson Lake levee, like those of other districts, had problems during high water. At one point, the lake-lovers of the area almost realized their dream of getting back the lake. Walter Hatton (pers. commun. 1987) remembered:

> It [the first levee] held that way for up to about 1926 and then we had the first real high water flood that came down that we'd had for years. The water got so high they had quite a few men working out on the levee there in the low spots to keep the river from going in through where this Thompson Lake was.... In 1929 they got some big dredge boats again, Gillen dredge boats, and they built the levee all the way from where the present hard road is that goes up by here from Spoon River to that little town of Liverpool.

Once again, however, the lake was not meant to be. Apparently, in 1929, some levee maintenance continued (Figure 28) and Walter Hatton (pers. commun. 1987) told an interesting story about it:

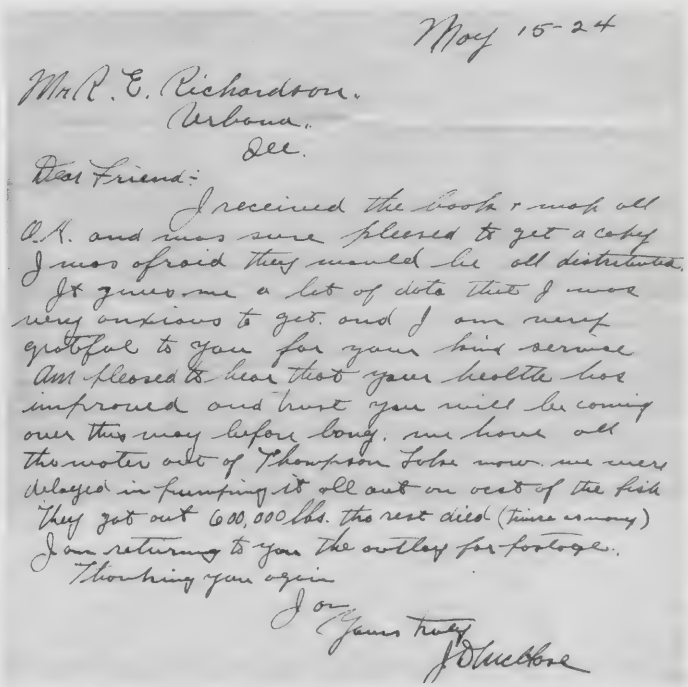
> They put the first levee up about 1919 and then the second, the big levee, about ten years later and the dredge boats that was digging the second time, they got right up north of where that tree line is, north of Spoon River, right up to where it meets the levee. This dredge was working along there one day and I was in the store that day and a man came in and we asked him what the news was. He worked on one of



Thompson Lake Rod & Gun Club,
Fulton Co., Illinois.

DATE		NAME	RESIDENCE	DEPARTURE
		Fall 1922		
Sept	24	H Bates Jr	Indpls	Sept 27
Nov	10	David A Stiker	Chicago	
"	"	Jay C McCord	"	
	"	Joy Morton	also hon Asst Sec of Agr	
	"	Sterling Morton	do	do
	"	Wirt Morton		do
		1923		
March	20	H Bates Jr.	Indianapolis	
April	26th	The day we decided upon the final plan for Thompson Lake Farms — besides the undersigned there was in the party - John McDermott - Jas Hudnall - Mr Frank Stratton, State Game and Fish Warden, his assistant Mr Drake - John Schuette		
		Joy Morton		
		E E Rogerson		
		John Goodell		
		H Bates Jr.		

Figure 26. On April 23, 1923, Joy Morton wrote in the Thompson Lake Rod and Gun Club register: "The day we decided upon the final plan for Thompson Lake Farms." This entry recorded the end to one of the most productive bottomland lakes in the Illinois River valley (Register courtesy of Doyle Parsley).



May 15-24

Mr R. E. Richardson.
Urbana.
Ill.

Dear Friend:-

I received the book & mark all O.K. and was sure pleased to get a copy I was afraid they would be all distributed. It gave me a lot of data that I was very anxious to get and I am very grateful to you for your kind service. Am pleased to hear that your health has improved and hope you will be coming over this way before long. We have all the water out of Thompson Lake now we were delayed in pumping it all out on account of the fish they got out 600,000 lbs. the rest died (time is money) I am returning to you the outlay for postage. Thanking you again

I am Yours truly
J D McHose

Figure 27. A letter from J.D. McHose on May 15, 1924 to Robert E. Richardson of the Illinois Natural History Survey mentions that the removal of all the water from Thompson Lake was now complete but was delayed because of the fish (INHS files).

Figure 28. The completed levee of the Thompson Lake Drainage and Levee District, as it appeared in 1945, continues to separate the river from the former Thompson and Flag Lake area. The pump station (middle left) lies just inside the levee (INHS files).

> these dredge boats. "Well," he said, "we dug up some dinosaur bones where we were putting the levee around Thompson Lake there." We asked what they looked like. He said one bone was about 4 or 5 ft long and about as big around as a stove pipe and looked kinda like a hip joint and one like a big tooth.

The surface area of Thompson Lake and Flag Lake on 1903 maps prepared by J.W. Woermann for the U.S. Army Corps of Engineers was about 1,710 acres and 905 acres, respectively (Bellrose et al. 1983) (Figure 29). There were also about 70 acres of water surface in wetlands surrounding Thompson and Flag lakes. Forbes and Richardson (1919a, 141) commented that Thompson Lake increased in surface from 1,943 to 5,072 acres as a result of diversion of Lake Michigan water. According to Mulvihill and Cornish (1929, 38), the Thompson Lake Drainage and Levee District consisted of 6,000 acres of which 5,600 were assessable and of those, 5,400 acres were cultivated (Figures 30 and 31). Thus, Thompson and Flag lakes represented about 30 percent and 15 percent, respectively, of the drainage and levee district under the water regime near the implementation of Lake Michigan diversion and together occupied as much as 85 and 90 percent of the district in the early 1920s after diversion and before drainage.

Ironically, D.H. Thompson of the Illinois Natural History Survey field station in Havana wrote (1931, 72) "There is also some indication that many of the drainage districts of the Illinois Valley are proving unprofitable and will be abandoned as agricultural projects and will again be productive of fishes."

When their father, Joy, died in 1934, Stirling and Wirt Morton along with Joseph Cudahy and Daniel Peterkin, Jr., established Morton Farms Company (Figure 32). In 1946, the Thompson Lake Drainage and Levee District property was nearly purchased by the Illinois Department of Conservation, but the transaction fell through in the final stages (F.C. Bellrose, pers. commun. 1998). In 1947 the Morton Farms Company was sold to Norris Farm of Havana, a division of Norris Farms Fair Oaks Olympia Corporation (Oswalt 1972). The Norris Farm was expanded to more than 12,000 acres with the acquisition of adjacent and nearby lands, and by 1957 the farm employed 66 workers (Oswalt 1972) (Figure 33).

In 1943, during the flood of record for the Illinois River in the Havana area, the river level reached the top of the Thompson Lake levee and a major sandbagging effort was used to add elevation to its low areas (Figure 34). Frank Bellrose (pers. commun. 1998) reported that when the river reached the top of the levee, there was a calm wind for a few days; if the wind had blown from a south or southeasterly direction, the levee would have likely been overtopped. Howard White (pers. commun. 1990) recalled:

> ...1943...I would have just bet most anything that that levee was gonna' go. The soldiers from Camp Ellis were out there sand bagging on the levee and I went with him [Herb Borgelt] to carry some of these sandwich baskets and we stopped at the first place there

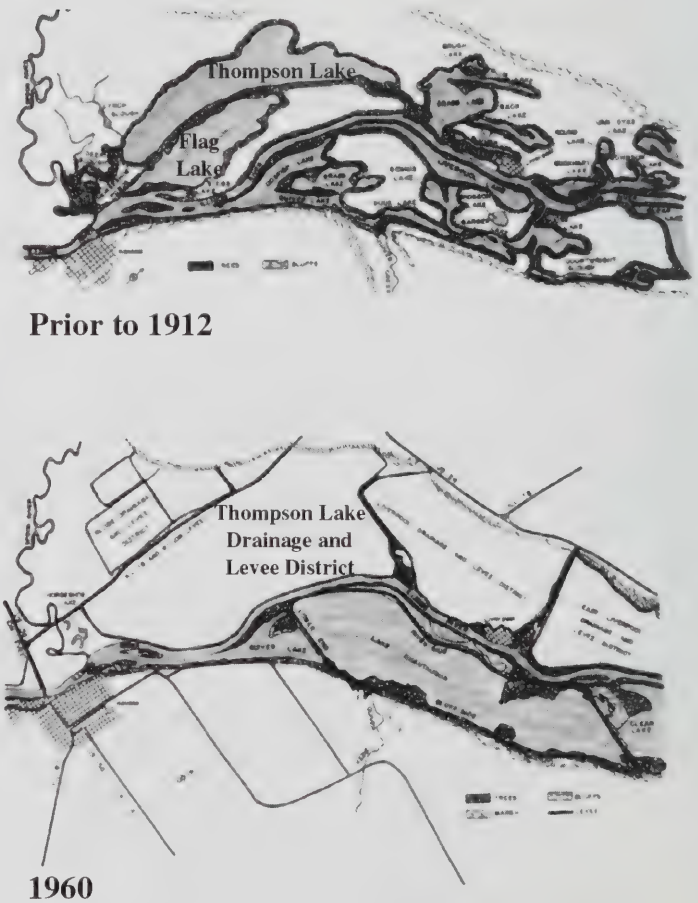


Figure 29. These drawings are a representation of the area surrounding Thompson and Flag lakes before and after drainage (after Mills et al. 1966).

Figure 30. The beds of Thompson and Flag lakes became cultivated farmland, as seen here in 1945 (INHS files).

Figure 31. The pumping station of the Thompson Lake Drainage and Levee, shown in 1945, allowed the old lake beds to produce agricultural crops (INHS files).

Figure 32. An office, shown here in the early 1930s, and several employee homes were constructed on the farm near the former site of the Thompson Lake Rod and Gun Club clubhouse along the west shoreline of Thompson Lake. The fireplace and chimney from the clubhouse were retained in some of the structures (INHS files).

Figure 33. This southward view of Norris Farm (ca. 1960s) shows the office and feedlot complex with the Thompson Lake Drainage and Levee District on the east side (left) of state highways 78 and 97 and the Globe Drainage and Levee District on the right (Regenos and Regenos 1973).

> where the levee comes to the road and we started walking out on that thing and the water was just so far (inches) from going over, just lappin' on it, you might say. And it was just like walking on a sponge, just soggy soft. And you could look over on the farm side and you could see little rivulets running out here and there. I was just scared to death!

The cost of protecting the levee during the 1943 flood was more than $60,000, of which $30,000 was paid by the federal government (Stufflebeam 1968). Sand bagging also protected the Thompson Lake levee during the floods of 1979, 1985, 1995, and 2002 when river elevations threatened to break or overtop the structure. Nevertheless, the levee has held since the late 1920s.

In 1976, Norris Farm was acquired by the Busoni family in Italy for $17.5 million, and because United States law masked foreign owners, the property was set up in a blind trust called Nor-Trust Farm Management, Inc. (Becker-Cary 1987). (A May 30, 1991 *Peoria Journal Star* article by Lori Timm stated the selling price was $14.5 million) . During this ownership fewer

Figure 34. Sandbagging was often used to raise and protect levees during floods (Karl Collection).

cattle were raised and more emphasis was placed on agriculture (Figure 35). The confinement cattle operation was active periodically supporting a total capacity of about 5,000 head. The management began purchasing irrigation equipment in 1980. Their specialty crop program was expanded in 1983 and included seed corn, popcorn, white waxy corn, and tomatoes. The 12,453-acre Norris Farm, of which 10,122 acres were tillable, yielded about 168 bushels of corn, 50 bushels of soybeans, 87 bushels of wheat, and 30 tons of tomatoes per acre in 1985 (First National Bank n.d.) (Figure 36). In 1986, there were 13 full-time management and staff personnel and about 35 part-time employees for the croping operations. Real estate taxes, which had been steadily declining, were $92,100 ($7.39/acre) in 1985; they were $168,295 ($13.51/acre) in 1981 (First National Bank n.d.).

The farm was put on the market again for an asking price of $18 million ($1,445/acre) in March 1986. Many people along the river began to call for the restoration of a backwater lake on the area. Indeed, there had been many suggestions for the reclamation of drainage and levee districts in the Illinois Valley for

Figure 35. In this photo taken in September 1987, the main office of the Norris Farm was situated on the west side of the lake bed of former Thompson Lake (INHS files).

Figure 36. The grain loading facility of Norris Farm in September 1987 was an important unit of the farming operation (INHS files).

tourism, recreation, or public ownership since the early 1900s (Havera 1993). Some citizens disliked the idea of foreign ownership. Others argued that the government was paying farmers to take land out of production and that grain was deteriorating in storage. Advocates wanted the lake restored for fishing, hunting, other recreation, education, and tourism. Local opposition against the restoration concept quickly formed in Fulton County resulting principally from the concern for loss of property taxes if acquired by a public agency (Kerrigan 1986). Employees of the farm wanted to retain their jobs and the agricultural community was sympathetic toward keeping the reclaimed bottomland in agricultural production.

The Thompson Lake Feasibility Committee was organized on December 5, 1986 in Lewistown with the primary purpose of generating support for a feasibility study examining the restoration of the lake (Thompson Lake Feasibility Committee Minutes 1986). Howard White of Havana and Loyd Dodd of Fiatt were elected as co-chairmen, Katie Roat of Havana as secretary, and Mike Kelly of Havana as treasurer of the committee. At the organizational meeting, Stephen Havera noted that: 1) the committee should realize that a feasibility study was being encouraged to determine whether the public purchase of the Norris Farm would be beneficial to the area; 2) a study on the economics and ecology of restoring the lake should be conducted by a neutral agency; 3) it would be important to reinforce existing recommendations to develop recreation and tourism in the area; 4) the committee should work with legislators and local officials for generating interest in a study; 5) additional support for a study from the surrounding communities should be sought; 6) if a study revealed restoration benefits, a possible source of funds for acquisition could be the Emergency Wetlands Resources Act; and 7) potential restoration assistance for development might be available from Lock and Dam 26 mitigation funds. Recreational and environmental organizations throughout the state were contacted for support and several endorsed a feasibility study and restoration concept.

Over the next few months, thousands of signatures of local and regional citizens endorsing a feasibility study were collected on petitions by the committee. Those petitions were delivered to appropriate legislators and their support was requested for a feasibility study evaluating public acquisition and restoration of backwater lakes on the property. In May 1987, the Illinois Department of Conservation Division of Planning announced that it would conduct a feasibility study (*Canton Daily Ledger* 1987). However, state funding for the study was stalled in the legislature because of opposition from the Fulton County Board (Gardiner 1987).

Over the years several studies recommended an emphasis on tourism for the economically depressed

Fulton-Mason county area. Jenkins, Merchant, and Nankivil and Walraven (1950) prioritized the restoration of the Thompson Lake district as second among the 13 drainage and levee districts along the Illinois River examined for potential cost-benefit values in reclaiming these areas for wildlife, fisheries, and flood control. A report solicited by the Fulton County Planning Commission and prepared by Bartholomew, Harland, and Associates (1969) recommended that "water oriented recreation facilities are a possible source for significantly improving the local economy and conservation and restoration of historical and archeological sites within the county can also do much to stimulate tourism and recreation." In 1986, the Fulton County Board commissioned an Economic Adjustment Strategy. The study by PLANTEC Corp. (PLANTEC Corporation 1986) suggested enhancement of economics of the area by capitalizing on tourism and recreation in conjunction with the established Spoon River Scenic Drive and Dickson Mounds Museum and development of a lake in that immediate vicinity along U.S. Highway 24, namely Thompson Lake. In 1990, the Fulton County Overall Economic Development Committee prepared a program for the county. The resulting document presented a goal which identified the need to develop the economic benefits from various natural resources, tourism, and recreational opportunities in Fulton County (U.S. Fish and Wildlife Service 1993).

In March 1987, the Fish and Wildlife Service held a multiagency workshop in Denver, Colorado, to analyze various alternatives for enhancing the management capabilities of Chautauqua National Wildlife Refuge, located directly east across the river from the farm. Participants concluded that additional development of Chautauqua Refuge might not be the most cost-effective way of meeting the envisioned objectives of the U.S. Fish and Wildlife Service (USFWS) for the Illinois River valley. It was suggested that an evaluation of additional alternatives, such as acquisition of the Thompson Lake and Globe Drainage and Levee districts and subsequent restoration of their former bottomland lakes and wetlands, would be highly desirable (Roelle et al. 1988). As a result, personnel from four state and three federal agencies met in Springfield, Illinois, in November 1987 for a three-day workshop to discuss land-use alternatives for the proposed Thompson Lake Refuge. Four scenarios were developed for the area including: 1) maintaining agricultural production; 2) providing conservation easements; 3) establishing a refuge (restoration of Thompson and Flag lakes); and 4) enhancing recreation and wildlife.

Meanwhile in 1987, George N. Gillett, Jr., acquired Norris Farm for $15 million (Guebert 1989). (Timm, *Peoria Journal Star*, 1991, reported that the purchase price was $13 million.) Gillett's Denver-based companies included television stations, ski resorts, and meat packing plants. The annual payroll for the farm in 1990 was $700,000 and tax revenue from the land was about $86,000 (Kerrigan 1990) (Figure 37). In addition to raising Holstein cattle for lean-beef hamburgers, vegetables were grown for Del Monte, Heinz, Peter Piper, and Stokely on some of the additional 8,000 acres of land cash-rented in Fulton and Mason counties (Fargo 1990). Because of debts incurred largely from junk bonds, Gillett was soon looking for another buyer for Norris Farm (Timm 1991).

On June 3, 1991, Maurice Wilder, a Florida businessman, purchased the property for $18.5 million (Timm 1991) and the name was changed to Wilder Farms. It was reportedly the largest farm in the state. Wilder already owned 30,000 acres of farmland in Indiana, Illinois, and Missouri (Ferguson 1991). Touting elk and bison as the "meat of the future," Wilder purchased 40 head of bison and 70 elk in 1994 while the amount of cash-rent farm land was reduced (Bouyea 1994). However, the bison were gone by late 1995 and attention was focused on ostriches, elk, feedlot cattle, and agricultural crops on the farm proper.

In spite of the sales of the property, the USFWS remained interested in the site. The USFWS held an informational meeting in April 1990 at Lewistown Community High School to discuss the various scenarios and alternatives generated from the November 1987 workshop. Public comments were noted and 77 individuals completed a "preference" survey. Two-thirds of the survey respondents preferred either the refuge or the wildlife/recreation scenario. Of the 386 individuals and 39 organizations subsequently sending letters stating whether they were for or against the restoration of Thompson Lake concept, an overwhelming majority supported restoration.

Subsequently, a study by Southern Illinois University entitled *Projected Economic Impacts of the Proposed Emiquon National Wildlife Refuge, Fulton County, Illinois* was conducted in 1991 (Wagner and

Figure 37. A northward view of the former lake bed of Thompson Lake is shown bisected by a drainage ditch, October 1990. The remnants of the lake bed appear along the right side of the drainage ditch. The headquarters complex of Wilder Farm is at the top of the photo (Photo by Max Schnorf).

Beck 1991). This study investigated the potential direct economic impacts resulting from creation and operation of the proposed Emiquon National Wildlife Refuge encompassing the Thompson Lake Drainage and Levee District. Possible impacts on employment, taxes, recreation, tourism, agriculture, and economic development in Fulton and Mason counties were addressed. The report concluded (Wagner and Beck, 1991, 9–10):

> Given the information on the nature of the regional economy and the anticipated negative effects of a shift away from agricultural production and the positive effects of the shift to wildlife-recreational activities, our data and analysis indicate that overall the positive economic effects outweigh the negative effects. There will be a net loss of direct income to those sectors affected by the reduction in the production of agricultural commodities. However, the combined positive economic effects of recreation and refuge operation will balance the economic loss of agriculturally related incomes and, because service jobs are labor intensive, they will more than compensate for the agricultural losses to the region's employment. The IMPLAN model predicts a net increase in regional incomes to all sectors of the economy of $632,200 dollars annually. An estimate of the effect on retail sales in the two county region was made from the IMPLAN projections: it is projected that annual retail sales will increase by $3,956,818 and that an additional $9,892 would accrue through the county wide quarter percent return of sales tax revenues on an annual basis. The combined effect of creating the refuge (agriculture, recreation and refuge operation) is projected to produce a net gain of 84 new jobs measured in full time equivalents within the regional economy. With these new jobs, population is estimated to increase by 335. Thus, the establishment of the refuge will change the local economy by a small margin, but it is not expected to drastically alter the structure of the local economy. Fulton and Mason County, Illinois are vibrant, viable local economies. Creation of Emiquon National Wildlife Refuge will add to their net economic flows and enhance the overall economic environment.

A public meeting was held by the USFWS at Dickson Mounds Museum in September 1991 to discuss this report.

A Final Environmental Assessment was completed by the USFWS in March 1993 (U.S. Fish and Wildlife Service 1993). The report considered the "...biological, environmental, and socioeconomic effects of establishing the proposed 11,039-acre Emiquon National Wildlife Refuge in central Illinois adjacent to the confluence of the Illinois River and the Spoon River. The purpose of establishing the refuge was to protect, restore, and manage migratory bird, fish, and resident wildlife habitat in the Illinois River valley, while providing for outdoor recreation and environmental education opportunities in the region" (U.S. Fish and Wildlife Service 1993, i). The four alternatives suggested earlier in 1987 were defined. The USFWS' recommendation was to develop the refuge scenario (U.S. Fish and Wildlife Service 1993, introduction):

> When complete, it will create an unprecedented opportunity to protect, restore, and manage a backwater lake, bottomland forest, and floodplain wetland complex to promote natural biological diversity. Thompson Lake and Flag Lake could provide fisheries habitat capable of supporting a self-sustaining, balanced fish community, a habitat type that is in very short supply within the Illinois River Valley. When restored, the proposed 11,039 acre environmental initiative could create excellent public use opportunities for over 800,000 people who live within a 1 hour drive from the Emiquon Refuge area. Wildlife observation, environmental education, interpretive trails, auto tours, fishing, hunting all could be available for the Refuge visitor.

Additionally, the report stated that "Annual payments to Fulton County from the Refuge Revenue Sharing Fund are expected to offset losses in tax revenue incurred as the USFWS acquires land and economic impacts will be favorable, and the Refuge will add economic diversity and stability to the Fulton and Mason County economic community" (U.S. Fish and Wildlife Service 1993, introduction). The report concluded that "the proposed Emiquon Refuge is projected to have a favorable impact on sales and property tax revenues and increase economic diversity and general activity in the Fulton and Mason County economic community" (U.S. Fish and Wildlife Service 1993, 47). The refuge scenario "...could increase the total income in the Fulton and Mason County economic community by $1,784,822, create 89 new employment opportunities measured in full time equivalents and increase the population by 355 people" (U.S. Fish and Wildlife Service 1993, 41).

The 1991 Projected Economic Impacts report was evaluated and updated in 1997 to develop more current estimates of the refuge's potential effects on Fulton and Mason counties (Hirschi and Braden 1997). This report revealed a positive economic impact on the region despite the loss of agricultural income. Based upon 1996 dollars, the estimated total regional impact resulting from an established refuge was over $2.2

million, 102 more jobs, and an increase of 246 in the population. County and municipal sales tax revenues were estimated to increase by more than $7,200 and $29,000 each year, respectively. Once again the refuge was projected to increase economic activity and have a net positive influence on the region and local governments.

A Refuge is Born

As a result of support generated by the Thompson Lake Feasibility Committee and others, Congress appropriated $1.43 million in 1993 from the Department of Interior's Land and Water Conservation Fund, with acquisition authority under the Emergency Wetland Resources Act, to establish the proposed Emiquon National Wildlife Refuge (Ross Adams, U.S. Fish and Wildlife Service, pers. commun. 1997) (Figure 38). The first parcel of land for the new refuge was purchased at 10:30 a.m. on December 29, 1993 from Norman and Zoe White for $207,000 and consisted of 283.7 acres lying along the Spoon River south and west of the Thompson Lake Drainage and Levee District (Alice Clanin, U.S. Fish and Wildlife Service, pers. commun. 1994; Harty 1994; *Peoria Journal Star* 1994). Another $1 million of acquisition funds for Emiquon Refuge was appropriated from the Land and Water Conservation Fund in 1996.

In May 1996, The Nature Conservancy assisted in the second purchase of land for Emiquon Refuge. This acquisition was located from the mouth of the Spoon River westward along the southern boundary of the Thompson Lake and Globe Drainage and Levee districts (Figure 38). The Wilder Corporation's sale price of $750,000 differed from the U.S. Fish and Wildlife Service's appraised value of $718,000 for approximately 800 acres. Fortunately, The Nature Conservancy intervened, provided the difference in price, and the purchase was made (*Peoria Journal Star* 1996). The U.S. Fish and Wildlife Service then acquired the property from The Nature Conservancy for the appraised value using funding from the congressional appropriations. The U.S. Fish and Wildlife Service gained possession of the 800 acres of bottomland forest, sloughs, and agricultural land on December 31, 1996. By the end of 1996, Emiquon Refuge consisted of approximately 1,100 acres purchased for $1,002,400, an average of about $895 per acre. Furthermore, in 1996, Senator Paul Simon visited Emiquon Refuge and the surrounding area and added his endorsement to the project (Hall 1996).

In 1997, $525,000 of grant funds were received from the North American Wetlands Conservation Act for the enlargement of Emiquon Refuge. This grant was matched with $526,300 consisting of $250,000 of Illinois Migratory Waterfowl Stamp Funds, $250,000 from Ducks Unlimited, Inc., $15,800 of trees and plants from the Illinois Department of Natural Resources Mason County State Tree Nursery, $3,500 from The Nature Conservancy, $1,000 from the Meredosia-Chambersburg school, and $6,000 from the Caterpillar Foundation (Ross Adams, U.S. Fish and Wildlife Service, pers. commun. 1997). All of these funds along with the remaining $1.4 million of federally appropriated funds were used to purchase land towards the ultimate goal of establishing a refuge consisting of over 11,000 acres and including what was once Thompson and Flag lakes.

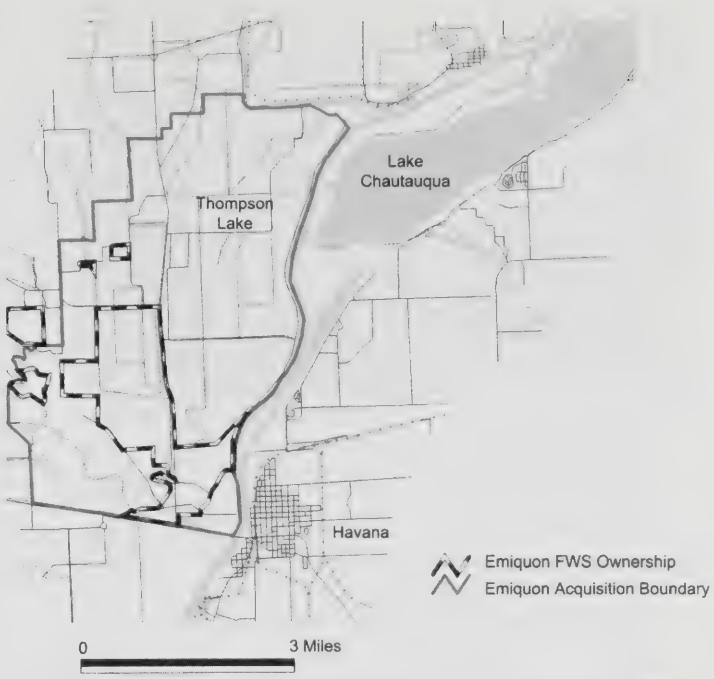


Figure 38. Boundaries are outlined of the proposed 11,039-acre acquisition of the Emiquon National Wildlife Refuge established in 1993 and the approximate 2,150 acres owned by the federal refuge in 2001 (Based on map from U.S. Fish and Wildlife Service).

By 1998, Emiquon Refuge comprised approximately 1,300 acres with recent acquisitions from willing local owners of two parcels totaling 183 acres for $287,500 (Figures 39 and 40). The Illinois Duck Stamp Fund and Ducks Unlimited reimbursed the USFWS some of the purchase price as part of a North American Wetland Conservation Act grant agreement.

In late 1999, the U.S. Department of Interior made available another $16 million for use by the USFWS in purchasing additional land within the approved boundaries of Emiquon National Wildlife Refuge (Ross Adams, U.S. Fish and Wildlife Service, pers. commun. 1999) (Figure 38). Negotiations with Maurice Wilder for the purchase of his farm to increase the refuge were continuing with The Nature Conservancy. Near the end of 1999, Wilder decided to sell his remaining property within the refuge acquisition boundary to The Conservancy. In early 2000, the USFWS still owned about 1,300 acres in the Emiquon acquisition area but The Conservancy purchased an additional 866 acres for nearly $2 million from Wilder and was planning on selling more than 700 of these acres to the USFWS (Aberle and Hopkins 2000).

Figure 39. This westward 1984 view shows the majority of the Emiquon National Wildlife Refuge property as it would exist in 1998 bordered by the Illinois River at Havana on the east (bottom) and U.S. Highway 136 on the south (left). The southern end of the Thompson Lake Drainage and Levee District can be seen on the right immediately above the island in the river (INHS files).

Figure 40. Similar to Figure 39, this photo shows the future Emiquon Refuge at flood stage in winter 1982. Thompson Lake Drainage and Levee District remains dry (top right) (INHS files).

On May 1, 2000, The Nature Conservancy publically announced at Dickson Mounds Museum what many had sought since the 1920s—the purchase of the historic Thompson and Flag lake area as part of 6,661 acres for $16.35 million, the remaining property owned by the Wilder Corporation within the proposed refuge acquisition area (Aberle 2000a). Thus, The Conservancy had acquired 7,527 acres for $18.3 million in 2000 and along with the 1,300 acres of USFWS property, purchase of the targeted 11,000-acre refuge established in 1993 was approaching completion. However, The Conservancy spokesmen announced at the ceremony, that although communication with the USFWS continued, The Conservancy expected to retain ownership of at least some, if not all, of the Wilder property (Martin 2000). The Conservancy also mentioned that the acquired property would remain in agriculture for at least three years, and Wilder had an option to continue farming for up to an additional seven years. Nevertheless, the $16.4 million price tag for the recent acquisition was thought to be the most expensive conservation purchase made in the history of Illinois for part of what once was the largest farm in the state (*Peoria Journal Star* 2000).

Intense deliberations and discussions about eventual ownership of the newly acquired property ensued among The Conservancy, the USFWS, and Illinois Department of Natural Resources officials as well as citizens over the next several months. In the end, The Conservancy decided to retain ownership of the 7,500 acres. As a result, the $16 million of funds specifically earmarked for the USFWS' Emiquon Refuge were not allocated as required before September 30, 2000 (Lampe 2000a, Loos 2000) and these funds were redirected to another state. The USFWS was left with what funds it had previously acquired, around $1.5 million and another $1.0 million from the 2001 Department of Interior spending bill, for acquisition of property for Emiquon Refuge.

In the meantime, the potential management of the area, particularly the restoration of Thompson and Flag lakes, was vigorously debated. The Conservancy preferred some form of reconnection of the lakes to the river for possible benefits, including nutrient exchange and habitat for ancient fishes like the paddlefish (*Herald Review* 2001). This concept was not favored by others who wanted the lakes, marshes, and wetlands restored by cessation of pumping from the drainage district while maintaining the levee to protect the restored areas from current threats now associated with the river—especially the high sediment loads, unnaturally fluctuating water levels, and detrimental exotic species, such as Asian and European carp (Dodd 2000, Aberle 2000b, Lampe 2000b, Richardson 2000, Bellrose 2000, Loos 2000).

Subsequently, to address the various philosophies about the restoration and management of Thompson and Flag lakes and the other former Wilder property, The Conservancy held a three-day workshop in early April 2001 in East Peoria. Approximately 40 scientists of appropriate disciplines were invited to discuss scenarios for The Conservancy's property, now known as the Emiquon Project to differentiate it from the federal Emiquon National Wildlife Refuge (Crawford 2001) (Figure 38). The workshop deliberations were to provide a foundation and guidelines for eventual habitat goals and attendant management methodology for The Conservancy property after the cessation of farming activities by the Wilder Corporation.

In 2001, however, the USFWS was very active in acquiring property within the acquisition boundaries of Emiquon Refuge. Four parcels totaling 141 acres were acquired from willing local residents for $323,500. A major acquisition for the refuge occurred in October

2001 with the purchase of the 712-acre South Globe Drainage and Levee District from The Conservancy for $1.78 million with the remaining funds from the North American Wetlands Conservation Act grant (*Peoria Journal Star* 2001). The South Globe District was part of the 7,527 acres acquired by The Conservancy from the Wilder Corporation. As a result, in 2001 The Conservancy maintained ownership of 6,815 acres of the former Wilder property and the USFWS held title to an additional 2,156 acres of which 1,600 acres were purchased from The Conservancy since 1996. Together both agencies now owned almost 9,000 of the 11,000 acres of the proposed area of Emiquon Refuge. Although USFWS discussions continued with The Conservancy for federal acquisition of the 600-acre North Globe Drainage and Levee District and with other land owners in 2002 and 2003, it came as no surprise that the weak economy provided no funding for federal purchase of additional refuge property.

In late 2002, Maurice Wilder notified The Conservancy that he would no longer farm his former property (Martin 2002). Thus, Wilder had continued farming operations for the 2000–2002 cropping seasons after his sale of the property to The Conservancy. A public sale of the Wilder Corporation farm equipment was held on December 16, 2002 and the 400 herd of elk was sold that fall as well. Beginning in 2003, The Nature Conservancy had jurisdiction over the management of their remaining former Wilder property, now officially renamed the Emiquon Preserve. The preserve included most of the Thompson Lake Drainage and Levee District (two private land owners still retained about 300 acres in the northern part of the district), the North Globe Drainage and Levee District, and the bluff area that over the years had served as pasture for cattle, ostriches, bison, and elk. Because of the enormity of the scale to transfigure the cropland, buildings, cattle yard, and other structures of the former Wilder Farm to wetlands in the Thompson Lake Drainage and Levee District, The Conservancy decided to cash-rent their tillable acreage in this as well as the North Globe District on an annual basis for the next few years until restoration plans were formalized and ready for implementation. Consequently, the sea of corn, soybeans, and other crops cultivated for 80 years on the irrigated, fertilized, and plowed beds of Thompson and Flag lakes were anticipated to become valuable natural wetlands and lakes as they had been for centuries.

UNDER THE MICROSCOPE

The fertile resources of the Illinois River and it's floodplain were frequently the subject of scientific research. The Natural History Society (later known as the Illinois Natural History Survey) was formed in 1858. As the landscapes of Illinois became more developed, Survey scientists documented the status of the flora and fauna throughout the state as well as the Illinois River. As a result, these 19th century investigators provided benchmark knowledge for future research and restoration.

Stephen A. Forbes, the first chief of the Illinois Natural History Survey, initiated studies on the Illinois River in 1876 and documented the distributional records and food habits of fishes (Figure 41). Forbes' devotion to the Illinois River fostered his enthusiasm for a biological station. In 1894, the University of Illinois Biological Experiment Station, under the direction of Forbes, was established near Havana. From here, scientists undertook the first serious study of the biology of a river system in the United States (Havera and Roat 2003) (Figures 42 and 43). The research on the Illinois River and its floodplain lakes conducted by Forbes and his co-workers at the station, known as the Stephen A. Forbes Biological Station since 1989, continues today. Findings from some of the early studies are presented to illustrate the biological aspects of bottomland lakes in the Illinois River valley before and following the effects of increased diversion of Lake Michigan water, increased levels of domestic and industrial pollution, and the formation of drainage and levee districts.

Thompson and Flag lakes were frequently sampled by the early Survey scientists (Figure 44). In the late 1800s, Thompson Lake was one of the largest permanent backwater lakes on the Illinois River and was generally associated with the river through its backwater sloughs (Hart 1896, Kofoid 1903). Its environment was, therefore, affected by changes in the river, and the condition of the lake was an indicator of those changes. Charles A. Kofoid (Figure 45) described Thompson Lake as "...a large body of water with less vegetation and little accession of creek and spring water. It is essentially a storage reservoir for flood waters...." (Kofoid 1901). Flag Lake, shallow and usually isolated from the river, was a more uniform environment than many other backwater lakes (Figure 46); consequently,

Figure 41. Illinois Natural History Survey scientists collected algae and aquatic plants from Thompson Lake in 1894 (Board of Illinois State Fish Commissioners 1897).

it was important for the study of somewhat independent and isolated backwaters. Kofoid described Flag Lake as "...a vast marsh choked with a rank growth of semiaquatic vegetation throughout the year, though this is submerged in time of flood" (Kofoid 1901). The following is a brief summary of some of the studies that investigated properties of these unique lakes.

Figure 42. Beginning in 1896, scientists used a houseboat laboratory located on the eastern shore of Quiver Lake immediately above Havana to facilitate their research on the Illinois River and associated bottomland lakes (INHS files).

Figure 43. The Illinois Natural History Survey laboratory boat is moored on the shore of Quiver Lake in 1898. Thompson and Flag lakes lie in the background (Forbes 1898).

Figure 44. Illinois Natural History Survey scientists (from left), Miles Newberry, Frank Smith, Hatcher Brown, and William Shafer, enjoy lunch on the sandy shore of Thompson Lake after sampling in 1894 (INHS files).

From 1894 to 1899, Charles A. Kofoid performed an extensive study focusing upon plankton of the Illinois River (Figure 47). His main objective was to determine a normal pattern for aquatic habitats that would facilitate the detection of developing biological problems. He examined plankton because they were "...the most concrete assemblage of organisms..." (Kofoid 1903, 95). Kofoid documented the turbidity, silt load, temperature, plankton production, chemical makeup of the water, and hydrographic conditions of Thompson and Flag lakes. Flag Lake was a notable site because it was "...one of the most strongly localized of all plankton stations, and the unity of its environment was more continuously maintained than that of any of the localities thus far examined" (Kofoid 1903, 382). Thompson Lake was also important because it was "...resembling in all important particulars except that of submergence in times of general overflow and its reservoir relation to the river a typical lake of an alluvial prairie country" (Kofoid 1903, 393). Altogether Kofoid published nearly 1,000 pages on the plankton of the Illinois River; he also documented in great detail, the importance of the spring flood toward maintaining the biological diversity of the river system (Kofoid 1903; 1908).

Figure 45. Charles Kofoid (front) and Miles Newberry of the Illinois Natural History Survey spent many hours sampling in the Illinois River floodplain in the late 1890s (INHS files).

Figure 46. Flag Lake, as it appeared in 1910, was historically shallow, usually isolated from the river, and a more uniform environment than many other backwater lakes (INHS files).

Because Forbes believed that field work as well as book knowledge was essential in a person's complete education, biology students at the University of Illinois assisted with research on the river at the Havana station. Richard W. Sharpe's master's thesis, *Contribution to a Knowledge of the North American Fresh-Water Ostracoda Included in the Families Cytheridae and Cyprididae* (1897), described the life history, habitats, seasonal and local distribution, and physical characteristics of 22 species of ostracods primarily associated with the Illinois River. Of these species, 14 were new to America, and *Limnicythere illinoisensis* was one of the new seed shrimp species found in Thompson Lake.

Another 1897 study, *Descriptions of New Species of Rotifera and Protozoa from the Illinois River and Adjacent Waters*, by Adolph Hempel focused upon two groups of zooplankton and presented the physical features of several new species. In 1898, Hempel published *A List of the Protozoa and Rotifera Found in the Illinois River and Adjacent Lakes at Havana Illinois*, which extended his previous work. This paper discussed geographical, local and seasonal distribution, food relations, and a classification system of zooplankton based on physical characteristics. Because of the distinctive features of Thompson Lake, rare species of rotifers, such as *Distyla hornemanni*, *Cephalosiphon limnias*, and *Oecistes intermediu*, were found there. Flag Lake also had several unique species, including *Megalotrocha semibullata*, *Asplanchna girodi*, and *Euchlanis pyriformis*. As a result of Thompson Lake's connection with the river, several species of protozoans and rotifers, were found in both the river and the lake. A few examples were *Ceratium hirundinella*, *Strombidium claparedi*, and *Anuraea aculeata valga*.

Figure 47. Charles Kofoid (left), seen here with Miles Newberry, performed extensive research on the plankton of the Illinois River for the Illinois Natural History Survey (Forbes 1897).

In 1898, W.E. Loucks published the seventh in a series of papers with the objective "...to obtain by means of cooperative labor the present range of certain species of birds in Illinois, and to issue monthly reports, based on the contributor's notes and such information as could be obtained from lists and catalogues, both state and local" (Loucks 1898, 10). Using local people as a source of information, his paper entitled *The Life History and Distribution of the Prothonotary Warbler in Illinois* noted that these warblers arrived at Thompson Lake about May 1 to 10 each year and their population greatly increased along the Illinois River and its tributaries between 1892 and 1897.

In 1906, Frank C. Baker completed *A Catalogue of the Mollusca of Illinois*, which listed a classification scheme and the distribution of mussels found in the rivers of Illinois. Of the 145 species reported in Fulton County, 21 were found in Thompson Lake.

Forbes and Richardson published their classic *Fishes of Illinois* in 1908. Their intent was to "...furnish to those interested in Illinois fishes a reliable guide to a knowledge of the species, a careful account of their local and general distribution and of their relations to their environment, a correct idea of the function and relative importance of the different species in the general system of aquatic life, and a fairly full summary of their habits and utilities so far as these are now known" (Forbes and Richardson 1908, xi). For sampling sites, every river in Illinois and many of the backwater lakes along the Illinois River were used, including Thompson and Flag. Although original copies of this book are rare, it is considered a landmark reference. In 1919(b), a companion book entitled *Atlas to Accompany a Report on the Fishes of Illinois* was completed.

In the early 1900s, when the Sanitary and Ship Canal was constructed allowing the diversion of Lake Michigan water into the Illinois River, Thompson and Flag lakes were so well documented it was possible to determine some of the effects of increased water levels. In 1910, C.C. Adams reported to the Illinois State Academy of Science summarizing how the river environs were changed by the diversion of water and focused on the area near Havana including Thompson Lake, Flag Lake, Quiver Lake, and the channel. His study, *Recent Habitat Changes in the Illinois River*, provided an excellent perception of what human disturbance can do to an environment. The following is an account of what Adams (1910, 7–9) witnessed at Flag Lake.

The boundaries of Flag Lake are indicated, in the main, on the east side by a broad zone of large dead willow trees, and on the west by a similar zone of willows, maples, etc., which mark the main boundary and the former shore of Thompson's Lake, but which in early August was several feet under water. There is a continuous boating on a line east and west from Thompson, through Flag Lake to the river,— and even eastward to the bluff of Quiver Lake. Later in August the west bank of the river emerged and it is on this higher ground that some of the large willows are preserved, while those on the lower land have been killed.

Instead of the extensive acres of open marsh, crowded with rank swamp vegetation and resounding with the noises of swamp birds and of feeding fish, which characterized the former level of this Lake, one now sees a broad expanse of open water bordered by a zone of large dead tree trunks among which are scattered colonies of Smartweeds (*Polygonum*), algal mats, and Duckweeds, and hears mainly the splash of a startled gar as the boat glides through the water. Wading is no longer practicable, and the scattered patches of smartweeds (*Polygonum*), and large colonies of it in shallow water, are the most conspicuous forms of living vegetation near the margin. The open water abounds with a grass-like *Potomogeton*.

On the eastern side of the Lake, about a mile north of the outlet into the River, is a large shallow cove, which is bounded on the north by a projecting point or low forested ridge.... This area is largely covered by an abundant growth of Smartweed (*Polygonum*) and tangled felt-like mats of algae. The fulvous winged males of the dragonfly *Perithemis domitia*, Drury, abounded in this zone.

The western border of Flag Lake is a low submerged sandy ridge.... The large dead trees are willows, elms, maple, and an occasional undergrowth of the Button Bush is seen. This was formerly the ridge which made the eastern shore of Thompson's Lake.

A small colony of White Water Lilies has persisted or established itself upon the ridge, and associated with it are large quantities of Smartweed (*Polygonum*) and the grass-like and "Deer Tongue" Potomogetons; a thick layer of Duckweeds floats upon the surface. The snags and brush near the surface of the water are festooned with mats of drying algae, which become lodged and exposed as the water level falls. Here the water was about 30 inches deep, and the bottom muddy. Fishermen reported that at the north end of Flag Lake, in water 2 or 3 feet deep, Flags are found; also that the Muskrats (*Fiber*) have practically disappeared from the region.

The dominance of the deeper water has subordinated the rank growth of marsh vegetation, has retarded the accumulation of vegetable debris, and replaced it by the less luxuriant and less varied open water kinds; thus decreasing the amount and variety of vegetable foods for animals, and has produced a more uniform habitat. It has placed the substratum out of reach for some animals,—as the muskrat, for example,—has eliminated, to a large degree, the surface film association, which thrives best in quiet, shallow waters. In general these are types of animals whose structure, physiology, life history and behavior find their optimum in a marsh environment.

Adams (1910, 11–15) continued with a description of Thompson Lake (Figure 48).

Formerly there was a wagon road along the southern shore of Thompson's Lake. This is now submerged by several feet of water, and is a regular open pathway for launches through the bordering area of dense vegetation. This open way is due to the absence of a rank growth of Smartweeds, which have failed to invade this old roadway. I have seen no photographs of this area during the period of lower water, but the extensive zone of dead willows and dead bottom land forest, which borders the lake on the south, clearly shows that the old boundary lines have been shifted, here as elsewhere.

Ready access to the southern end of Thompson's Lake is made by a narrow channel, the "cut road", as it is known locally [Figures 9 and 11]. During the low water period the region traversed by this channel was periodically out of water and supported a rank growth of large willows.... The trees are doomed, and the willows have made a severe struggle.... Smartweeds (*Polygonum*) make up the bulk of the herbaceous vegetation. "Deer Tongue" (*Potomogeton*) floats upon the surface. In the willows a Locustid *Orchelimum nigripes*, Scudd, abounds. The relics are clearly the trees and the later invaders are the amphibious Smartweeds, *Orchelimum* and the "Deer Tongue." Upon the branches, trunks of trees, brush and stems of stronger herbaceous vegetation, are found, in immense numbers, a few kinds of Bryozoans; particularly upon the

smaller branches are vast numbers of the large jellylike masses of *Pectinatella magnifica*, Leidy. Animal life was found in great abundance in the floating mats of vegetation, including Amphipod crustaceans in very large numbers, and chironomid fly larvae.

From the mud bottom were dredged leeches, Amphipods, *Sphaerium*, and *Valvata*.

The western termination of the "cut-road" ends at the southeastern part of Thompson's Lake, in the zone of Smartweeds (*Polygonum*)....

Lakeward from this Smartweed zone lies the open water with its scattered grass-like Potomogetons, which teem with small animals; an association of the same general character as that found so abundantly in Flag Lake....

Around the southern end of the lake there is an extensive development of the Smartweed zone.... In the floating algal mats of this zone were found great numbers of Amphipods and insect larvae, Bryozoans, thus much of the open water type.

Upon the Smartweeds were found Ladybirds (*Megilla maculata* DeG.) and the Locustid *Orchelimum nigripes* Scudd., which was also heard trilling in the willows along the "cut-road." This interesting Locustid ... is a lowland species which reaches maturity about July 20, and is usually abundant about the margins of the larger ponds and lakes, where it frequents the tall grasses and especially the stems and leaves of different species of Polygonum, or smartweed, growing in the shallow water. Among the willows it is not difficult to imagine how the eggs might be stowed away and survive the winter, but out among the Polygonums where shrubs or trees are lacking, there seems to be no safe place to pass the winter; possibly such a habitat must be restocked each year from the more favorable zone shoreward.

Figure 48. The broad expanse of Thompson Lake is shown as it appeared in 1911 (Illinois Submerged and Shore Lands Legislative Investigating Committee 1911).

Upon the submerged stems of Polygonum vast numbers of large colonies of the Bryozoan, *Pectinatella magnifica*, Leidy, were found encircling the stems. A single stem was likely to have several large masses. In about 5 feet of water, on the muddy bottom, were found shells of *Sphaerium*, *Physa*, and *Valvata*, May-fly nymphs, Chironomus, and other dipterous larvae.

Formerly the eastern shore habitats of the Lake were varied by its shelving character, and the diversified vegetation....

In 1909, about a mile and a half north of the "cut-road" on the eastern shore of Thompson's Lake the sand ridge was examined which forms the boundary line between Flag and Thompson's Lakes. The Thompson's Lake side of this ridge has a clean sand bottom near the open water, but back among the trees there is litter and a muddy bottom. The clean sand is doubtless due to the carrying away of vegetable debris into the forested zone by currents and waves, and to fresh sand washed up by the waves.

A collection made among "Deer Tongue" (*Potomogeton*), and among debris, contained a variety of animals, including leeches, Amphipods, May-fly nymphs, Dragonfly nymphs and Dipterous larvae. The animals from the sand bottom, after several dredgings, consisted of *Campeloma*, Agrionid nymphs, Amphipods, May-fly nymphs, Caddis fly cases and *Sphaerium*.

The zones of vegetation, with the increasing depth of water, have moved eastward, upon the crest, rather than remaining upon the slopes of the ridge, as formerly, and are almost permanently submerged. A change from the exposed littoral to the submerged littoral has taken place.

Considering the eastern shore of Thompson's Lake as a whole, there has been a submergence of the shallow vegetation covered east shore and an invasion of the formerly forested sandy ridge by plants and animals of amphibious habits and life histories; the destruction of shrubs and trees; and concurrently the production of insect food in

> the form of dead and decaying wood. On the south shore there has been an extension of the *Polygonum* zone, of the open water habitats, and their faunal associations.

Adams' 1910 paper was a benchmark study of the river and led the way for further investigations by scientists at the Illinois State Laboratory of Natural History on the extent of change resulting from the diversion of Lake Michigan water into the Illinois Waterway.

Adams' lengthy and detailed presentation to the Illinois State Academy of Science brought a response from W.S. Strode, a member of the academy who frequently visited the area. Strode reported that he had found a very scarce mussel species named *Anodonta suborbiculata* in Thompson Lake, which he described as "the handsomest of all mussels" (Coulter et al. 1910, 19).

Other sites associated with Thompson and Flag lakes were also used for research including Deep Slough on the south side of Thompson Lake, Lynch Slough west of Thompson Lake, and Danhole's Field (see Figure 3), a formerly cultivated 600-acre tract north of Lynch Slough. R.E. Richardson (1913a, 387) described this field:

> Except for two small "guts" at the south end, leading into Lynch Slough, a lotus pond of about one acre in the middle of the east side of the field, and a few narrow ridges toward the north end, the contour of the bottom of this marsh does not show great variation. The entire field is normally overflowed in April and May to a depth of one to three feet. Over almost the entire field is scattered a more or less dense growth of "flag" (*Scirpus fluviatilis*), while beneath and between the flags, and entirely covered by water through April and May, is usually to be found a carpet of short bog-rush (Juncas). With less uniformity of distribution but in places covering several acres continuously, are to be seen thick beds of smartweed, and mere scattering patches of cut-grass (*Leersia*), arrowhead (*Sagittaria*), and pickerel weed (*Pontederia*).

Richardson began studies in Thompson and Flag lakes and surrounding areas in April 1910 and made additional observations on the habits, habitat, and local preferences of fry and fingerlings of fishes in 1911. Two of his research sites involved parts of Danhole's Field and the head of Flag Lake which he described as having "...100 acres or more of 'flag,' smartweed, and willows. Bottom generally rather sandy: depth of water 1 to 3 feet, April and May, 1910 and 1911" (Richardson 1913a, 388). Some of his results were published in *Observations on the Breeding of the European Carp in the Vicinity of Havana, Illinois* (1913a). Richardson's *Observations on the Breeding Habits of Fishes at Havana, Illinois, 1910 and 1911* (1913b) discussed the breeding habits of fishes other than carp, such as shortnosed gar, bowfin, grass pike, brook silverside, speckled crappie, warmouth, bluegill, pumpkinseed, and largemouth bass (Figure 49).

In 1913, Forbes and Richardson published *Studies on the Biology of the Illinois River.* This investigation, like that of Adams (1910), noted the changes caused by the diversion of Lake Michigan water. The overall purpose of this study was to determine how local developments would affect the river so "...practical correctives may be applied where necessary..." to ensure that "...nothing is needlessly sacrificed in the course of the use and development of the stream" (Forbes and Richardson 1913, 483). It was important to document the immediate effects of higher water levels, increased deposition of sewage flowing into the river, and the formation of drainage and levee districts in the floodplain for agricultural use. Thompson Lake was an important source of data for this project. The study took three directions:

> ...the first year was given mainly to a study of the plankton of the river and of the principal bottom-land lakes, made on the same grounds and by the same methods and equipment as those of the period from 1894–1899; the second year was devoted especially to chemical determinations of the gases of the waters and of the bottom sediments of the upper river, from its origin to Chillicothe, and to parallel collections of the minuter plankton—the so-called microplankton—of the stream made at the same times and places as the chemical studies; and in the third year, similar chemical and biological determinations were made, with principal attention, however, to fishes and mussels and to the other plant and animal life of the bottom and the shores (Forbes and Richardson 1913, 484).

On November 11, 1913, Forbes met with the Illinois State Game and Fish Commission and discussed details of the Survey's research on the river. He emphasized that fish populations had dwindled considerably because of factors including increased pollution in the upper river and the formation of drainage and levee districts which destroyed breeding and feeding grounds.

In 1915, *The Chironomidae or Midges of Illinois, with Particular Reference to the Species Occurring in the Illinois River* by J.R. Malloch was published. This paper focused on the family Chironomidae and presented detailed descriptions of physical characteristics of many species. Malloch described the different stages of the life cycle—egg, larvae, pupae, and adult—and listed the locality from which each sample was obtained. Larval stages of one species in particular, *Palpomyia longipennis*, were obtained in large numbers in Thompson Lake.

Figure 49. R.E. Richardson conducted fish breeding studies on Thompson and Flag lakes during 1910–1911 (Mills et al. 1958).

Richardson recognized the implications of the effects of increased human population and pollution on the productivity of the river. He designed his research to monitor the changes in the river environment that were taking place. Forbes and Richardson (1919a) published *Some Recent Changes in Illinois River Biology*, a follow-up to their 1913 *Studies on the Biology of the Illinois River*. The 1919 paper further discussed the effects of its passage of Lake Michigan water and associated pollution to the Illinois River through the drainage canal of the Sanitary District of Chicago on lake depths, bottom fauna, fisheries, and bottom vegetation over time.

Subsequently, Richardson (1921a) completed *The Small Bottom and Shore Fauna of the Middle and Lower Illinois River and its Connecting Lakes, Chillicothe to Grafton: its Valuation, its Sources of Food Supply; and its Relation to the Fishery*. In this study, he evaluated the effects of dredging operations on the bottom and shore animals of the Illinois River and its backwaters from Chillicothe to Grafton. Richardson (1921a, 366) proposed to

> ...make an estimate, based on many quantitative collections, of the total store of animal life on and in the bottom sediments of different sections of the middle and lower Illinois River and its bottom-land lakes and on the plants of their shallower, marginal waters, to trace the causes of the wide differences in this respect between river and lakes and between different sections of the stream, to estimate, also quantitatively, the food resources which the bottom muds contain for the animals inhabitating them, and thus to trace in a general way the successive steps by which the organic materials in the muds and waters of the river system are converted into forms available as food for man.

Richardson found that in the stretch of the river above Havana the inshore and bottom fauna of the lakes averaged about twice as much weight per acre as that of the river. At midsummer levels, these lakes, including Thompson, were seven to nine feet deep, and their bottoms consisted of soft black mud in the middle with a little sand on the edges. The highest yield of fishes was also found in the lakes.

Six months later *Changes in the Bottom and Shore Fauna of the Middle Illinois River and its Connecting Lakes since 1913–1915 as a Result of the Increase, Southward, of Sewage Pollution* was published by the prolific Richardson (1921b). In this study he focused upon the bottom and shore fauna, such as snails, midge larvae, sludge worms and other insects and animals, as indicator species for pollution. Richardson noted that changes in the river just above Havana between 1915 and 1920 were more striking than those that occurred between Chillicothe and Peoria during the same period, indicating clearly that pollution had advanced southward. From samples taken at Thompson Lake, Richardson (1921b, 64) reported that "...not a single definitely recognized clean-water chironomid of the previous period (1913–1915) was found surviving in the larval or pupal stage in the muds." The pounds per acre of snails in Thompson Lake had decreased by about 97 percent from 1914–1915 to 1920 as the wave of pollution advanced southward along the river; the weight of all bottom-dwelling animals sampled, including snails, decreased from 472 to 12 pounds per acre during this same period. Fortunately, the organic industrial and domestic pollution prevalent in this era was dramatically reduced with the subsequent implementation of sanitary districts in municipalities along the river.

By 1924, Thompson and Flag lakes had been drained for agricultural purposes curtailing aquatic research activities. In fact, W.C. Purdy, in his paper entitled *A Study of the Pollution and Natural Purification of the Illinois River* (1930, 33), noted "Original plans included a study of one of the largest of these (Illinois River) backwaters, Thompson Lake near Havana, until it was learned that reclamation activities already begun would speedily eliminate this lake as a factor and would thus render such study comparatively valueless."

SUMMARY

Thompson and Flag lakes and their surrounding environments were unique and productive ecosystems that contributed substantially to Native Americans, the ecology of the river, fish and wildlife habitats, local economies, recreation, tourism, and aquatic research (Figure 50). The beds of Thompson and Flag lakes have been irrigated, productive farmland. The mussels, fishes, furbearers and wildfowl that the lakes supported and that supplied the bounty to local and distant communities are only fading memories. The benchmark research studies conducted at these lakes are exceptional references as scientists continue to investigate the environments of the Illinois River and its floodplain (Figure 51). With the long-awaited restoration of Thompson and Flag lakes on the horizon, their flora, fauna, and physical parameters will be the focus of future studies in yet another transition—their rebirth and reestablishment (Figure 52).

Figure 50. Thompson Lake once made a significant biological contribution to the Illinois River system (Forbes 1897).

Figure 51. Forbes Biological Station Center for Wildlife Ecology staff (from left), Aaron P. Yetter, Michelle M. Horath, Christopher S. Hine, Stephen P. Havera on the east levee of Thompson Lake Drainage and Levee District in 1994 near where the 1894 staff photo (Figure 44) was taken 100 years earlier (INHS files).

Figure 52. Taken in September 2002, this northward view of the Thompson Lake Drainage and Levee District is the location where Thompson and Flag lakes will be restored. The forested Spoon River floodplain lies to the south (below) and the Illinois River to the east (right) (Photo provided by Daniel Overturf).

LITERATURE CITED

Aberle, J.L. 2000a . Dream now reality for nature group. *Peoria Journal Star*, May 2.

Aberle, J.L. 2000b. Blackbird arrives for wetlands ritual. *Peoria Journal Star*, June 2.

Aberle, J.L., and E. Hopkins. 2000. Deal restores wetlands. *Peoria Journal Star*, April 29.

Adams, C.C. 1910. Recent habitat changes in the Illinois River. Trans. Ill. State Acad. Sci. Vol 3:18. Abstract. (Draft of text. 28 pp.).

Alvord, J.W., and C.B. Burdick. 1919. Second edition of report made to former Rivers and Lakes Commission on the Illinois River and its bottomlands. Dept. of Public Works and Buildings, Div. of Waterways. Springfield, IL. 137 pp.

Baker, F.C. 1906. A catalogue of the mollusca of Illinois. Bull. Ill. State Lab. Nat. Hist. 7(6):53–136.

Bartholomew, Harland, and Associates. 1969. The comprehensive plan, Fulton County, Illinois. Prepared for the County Planning Commission. Harland Bartholomew and Associates; Planning, Engineering, Landscape Architecture, Urban Renewal, Chicago, IL. 112 pp.

Becker-Cary, J. 1987. Agriculture versus lake at Norris Farms stirs a controversy. *Peoria Journal Star*, May 10.

Bellrose, F.C. 2000. Let federal agency manage Emiquon Refuge. *Peoria Journal Star*, June 26.

Bellrose, F.C., S.P. Havera, F.L. Paveglio, Jr., and D.W. Steffeck. 1983. The fate of lakes in the Illinois River valley. Ill. Nat. Hist. Surv. Biol. Notes. No. 119. 27 pp.

Board of Illinois State Fish Commisioners. 1897. Report of Board of Illinois State Fish Commissioners to the Governor of Illinois, Springfield.

Borgelt, L. 1973. The old game warden. *Pekin Daily Times*, May 25.

Bouyea, B. 1994. Meet 'the meat of the future.' *Peoria Journal Star*, March 15.

Boyce, A., and R. Gillam. 1976. A history of Mason County from the files of the *Mason County Democrat*. *Mason County Democrat*, Bicentennial Edition, Havana, IL, June 26.

Canton Daily Ledger. 1987. Norris plan still moving. May 11.

Charles, A.W., L.K. Sherman, and T.J. Healy. 1915. Letter from the Rivers and Lakes Commission to Edward F. Dunne, Governor of Illinois. Report on the Illinois River, Appendix I, Springfield.

Clancy, P.M. 1999. Early years: October 7, 1886. *Fulton County Democrat*, Lewistown, IL., April 21.

Coulter, J.M., A.R. Crook, and H.H. Stalk, eds. 1910. Trans. Ill. State Acad. Sci. 3:18–19.

Craig, W. 1898. On the fishes of the Illinois River system at Havana, Illinois. M.S. Thesis. University of Illinois, Urbana. 91 pp.

Crawford, S. 2001. Scientists meet on Emiquon. *Peoria Journal Star*, April 9.

Depler, J. 1973. Thompson Lake. Pages 271–273 *in* G.W. Regenos and A.Y. Regenos, eds. Historic Fulton County, sites and scenes, past and present. Fulton County Historical and Genealogical Society, Lewistown, IL.

Dodd, L. 2000. Saturday Forum: Keep sediment-filled river water out of Thompson Lake. *Peoria Journal Star*, May 13.

Ehresman, J. 1990. Colorful duck memories. *Peoria Journal Star*, April 29.

Esarey, D. 1993 (Revised 1995). The origin and early history of Emiquon. Dickson Mounds Museum, Lewistown, IL. 21 pp.

Fargo, C. 1990. This 'executive' gets hands dirty. *Canton Daily Ledger*, March 11.

Ferguson, K. 1991. New owner to keep growing crops on Norris Farm. *Peoria Journal Star*, June 9.

First National Bank of Springfield. n.d. Property Management Division presents the Norris Farm for sale. First National Bank of Springfield, IL. 62 pp.

Forbes, S.A. 1897. Biennial report of the Biological Experiment Station, 1895–1896. University of Illinois, Urbana. 35 pp.

Forbes, S.A. 1898. Biennial report of the director for 1897–98. Illinois Natural History Survey, Champaign, IL. 31 pp.

Forbes, S.A., and R.E. Richardson. 1908. Fishes of Illinois. Illinois Printing Co., Danville, IL. 357 pp.

Forbes, S.A., and R.E. Richardson. 1913. Studies on the biology of the upper Illinois River. Bull. Ill. State Lab. Nat. Hist. 9(10):481–574.

Forbes, S.A., and R.E. Richardson. 1919a. Some recent changes in Illinois River biology. Bull. Ill. Nat. Hist. Surv. 13(6):139–156.

Forbes, S.A., and R.E. Richardson. 1919b. Atlas to accompany a report on Fishes of Illinois. Illinois State Journal Co., State Printers, Springfield IL. 102 pp.

Friends of Our Native Landscape. 1921. Proposed park areas in the state of Illinois. Report to the Board of Directors, The Friends of Our Native Landscape, Chicago, IL. 120 pp.

Fulton Democrat. 1877. Lewistown, IL, November 15.

Fulton Democrat. 1882. Lewistown, IL, November 9.

Fulton County Ledger. 1907. Canton, IL, March 7.

Gardiner, R. 1987. Norris clause is cut. *Canton Daily Ledger*, June 18.

Guebert, A. 1989. Bullish and buying. Beef Today, August:18–22.

Hajic, E.R, W.G. How, C.F. Martin, J.S. Oliver, C.R. Rickers, T.E. Roberts, E.K. Schroeder, and M.D. Wiant. 2002. Cultural resources overview study of the Illinois River National Wildlife and Fish Refuges: Cameron-Billsbach, Chautauqua, Emiquon and Meredosia Wildlife Refuges, Mason, Cass, Fulton, Marshall and Morgan counties, Illinois. Illinois State Museum, Quarternary Studies Program, Technical Report No. 2000–1376–25. 391 pp.

Hall, J. 1996. Simon pledges to support refuge. *Peoria Journal Star*, July 21.

Hallock, C. 1877. The sportsman's and general guide. Forest and Stream Publishing Co., New York, NY. 896 pp.

Hart, C.A. 1896. On the entomology of the Illinois River and adjacent waters. Bull. Ill. State Lab. Nat. Hist. 4(6):1–273.

Harty, R. 1994. Wildlife refuge land purchased. *The State Journal-Register*, Springfield, IL., January 22.

Hatton, W. 1988. Back in those days. A.D. McCoy, Pekin, IL. 201 pp.

Havera, S.P. 1993. A historical perspective of wetlands and waterfowl populations and their importance in the Illinois Valley. Pages 101–111 *in* Proceedings of the Governor's Conference on the Management of the Illinois River System. Fourth Biennial Conference, Peoria, IL., 21–22 September 1993. Issued as Special Report No. 20, Water Resources Center, Urbana, IL. 195 pp.

Havera, S.P., and K.E. Roat. 2003. Forbes Biological Station: the past and the promise. Ill. Nat. Hist. Surv. Spec. Pub. 10. 24 pp.

Hempel, A. 1897. Descriptions of new species of Rotifera and Protozoa from the Illinois River and adjacent waters. Bull. Ill. State Lab. Nat. Hist. 4(10):310–317.

Hempel, A. 1898. A list of the Protozoa and Rotifera found in the Illinois River and adjacent lakes at Havana, Ill. Bull. Ill. State Lab. Nat. Hist. 5(6):301–388.

Herald Review. 2001. Wetlands restoration could become blueprint. *Herald Review*, Decatur, IL., May 27.

Hirschi, R.L., and J.B. Braden. 1997. Economic evaluation of the Emiquon National Wildlife Refuge in Fulton County, Illinois. Report for the U.S. Fish and Wildlife Service. 53 pp.

Illinois Division of Waterways. 1969. Report for recreational development: Illinois River backwater areas. Illinois Division of Waterways, Springfield. 100 pp.

Jenkins, Merchant and Nankivil, and W.B Walraven. 1950. Potential conservation areas along the Illinois River as a part of flood protection. Ill. Dep. Conserv., Springfield. 80 pp.

Kerrigan, J. 1986. State considering Norris Farm purchase. *Peoria Journal Star*, March 25.

Kerrigan, J. 1990. Wetland report targets Norris Farms. *Peoria Journal Star*, April 11.

Kofoid, C.A. 1901. Letter to Professor S.A. Forbes. Illinois Natural History Survey Files. February. 4.

Kofoid, C.A. 1903. Plankton studies. IV. The plankton of the Illinois River, 1894–1899, with introductory notes upon the hydrography of the Illinois River and its basin. Part I. Quantitative investigations and general results. Bull. Ill. State Lab. Nat. Hist. 6(2):95–629.

Kofoid, C.A. 1908. The plankton of the Illinois River, 1894–1899, with introductory notes upon the hydrography of the Illinois River and its basin. Part II. Constituent organisms and their seasonal distribution. Bull. Ill. State Lab. Nat. Hist. 8(1):1–361.

Lampe, J. 2000b. Will river create dump or diversity? *Peoria Journal Star*, June 4.

Lampe, J. 2000a. Emiquon refuge may soon acquire acreage. *Peoria Journal Star*, June 27.

Lewistown Evening Record. 1908. November 24.

Loos, R. 2000. Letting the river in. *State Journal Register*, Springfield, IL. July 2.

Loucks, W.E. 1898. The life history and distribution of the prothonotary warbler in Illinois. Bull. Ill. State Lab. Nat. Hist. 4(3):10–35.

Malloch, J.R. 1915. The Chironomidae, or midges of Illinois, with particular reference to the species occurring in the Illinois River. Bull. Ill. State Lab. Nat. Hist. 10(6):275–544.

Martin, W. 2002. Wilder opts out of Emiquon. *Fulton Democrat,* Lewistown, IL., October 16.

Mason County Democrat. 1891. Havana, IL., October 2.

Mason County Democrat. 1907. Havana, IL., March 3.

Mason County Democrat. 1908. Havana, IL., December 11.

McHose, J.D. 1924. Letter to R.E. Richardson. Illinois Natural History Survey Files, Havana, IL., May 15.

Mills, H.B., G.C. Decker, H.H. Ross, J.C. Carter, G.W. Bennett, T.G. Scott, J.S. Ayars, R.R. Warrick, and B.B. East. 1958. A century of biological research. Ill. Nat. Hist. Surv. Bull. 27(2)85–234.

Mills, H.B., W.C. Starrett, and F.C. Bellrose. 1966. Man's effect on the fish and wildlife of the Illinois River. Ill. Nat. Hist. Surv. Biol. Notes No. 57. 24 pp.

Mulvihill, W.F., and L.D. Cornish. 1929. Flood control report: an engineering study of the flood situation in the state of Illinois. Prepared under the direction of the Illinois Division of Waterways. Chicago, IL. 402 pp.

Oswalt, M. 1972. From ducks and fish to corn and cattle...a farm is born from the bottom of a lake. *Mason County Democrat*, Havana, IL., Mid-March.

Oswalt, M. 2003. Old times: April 13, 1923. *Mason County Democrat*, Havana, IL., April 15.

Parmalee, P.W., and F.D. Loomis. 1969. Decoys and decoy carvers of Illinois. Northern Illinois University, DeKalb. 506 pp.

Peoria Journal Star. 1994. First parcels bought for Emiquon Refuge. January 15.

Peoria Journal Star. 1996. Agency buys 800 acres for Emiquon Refuge. June 28.

Peoria Journal Star. 2000. Our view: Land buy makes more possible along Illinois. May 3.

Peoria Star Journal. 2001. Refuge grows. October 12.

Pickels, G.W., and F.B. Leonard, Jr. 1921. Engineering and legal aspects of land drainage in Illinois. Illinois State Geological Survey Bull. 42. 322 pp.

PLANTEC Corporation. 1986. Economic Adjustment Strategy for Fulton County, Illinois. Plantec Corporation, Jacksonville, Florida; and Planning Development Services, University Park, IL. 189 pp.

Purdy, W.C. 1930. A study of the pollution and natural purification of the Illinois River, Part II, the plankton and related organisms. U.S. Treasury Dep. Public Health Bull. No. 198. 212 pp.

Regenos, G.W., and A.Y. Regenos. 1973. Historic Fulton County, sites and scenes, past and present. Fulton County Historical Society, Lewistown, IL. 322 pp.

Richardson, R.E. 1913a. Observations on the breeding habits of the European carp in the vicinity of Havana, Illinois. Bull. Ill. State Lab. Nat. Hist. 9(7):387–404.

Richardson, R.E. 1913b. Observation on the breeding habits of fishes at Havana, Illinois, 1910 and 1911. Bull. Ill. State Lab. Nat. Hist. 9(8):405–416.

Richardson, R.E. 1921a. The small bottom and shore fauna of the middle and lower Illinois River and its connecting lakes, Chillicothe to Grafton: its valuation; its sources of food supply; and its relation to the fishery. Bull. Ill. Nat. Hist. Surv. 13(15):363–522.

Richardson, R.E. 1921b. Changes in the bottom and shore fauna of the middle Illinois River and its connecting lakes since 1913–1915 as a result of the increase, southward, of sewage pollution. Bull. Ill. Nat. Hist. Surv. 14(4):33–72.

Richardson, S. 2000. Wildlife Service, Nature Conservancy split over backwater area. *Bloomington Pantagraph*, June 11.

Roelle, J.E., D.B. Hamilton, and R.L. Johnson. 1988. Refuge management analyses: restoration of Thompson Lake as an alternative to further development at Chautauqua National Wildlife Refuge. U.S. Fish and Wildl. Serv., Nat. Ecol. Res. Cntr., Fort Collins, CO. NERC–88/12. 65 pp.

Schneider, D.W. 1996. Enclosing the floodplain: resource conflict on the Illinois River, 1880–1920. Environmental History 1(2):70–96.

Sharpe, R.W. 1897. Contribution to a knowledge of the North American fresh-water Ostracoda included in the families Cytheridae and Cypridedae. Bull. Ill. State Lab. Nat. Hist. 4(15):414–482.

State of Illinois. 1917. Transcript of *State v. New*, 280 Ill 393 (Oct. 23), Record Series 901, Supreme Court Trial Transcripts, Vault #36505, Illinois State Archives.

Strode, W.S. 1893. An old-time outing. Ornithologist and Oologist 18(6):86–90.

Stufflebeam, K. 1968. Liverpool Township. Page 204 *in* H. Clark, ed. A history of Fulton County, Illinois, in Spoon River country, 1818–1968. Fulton County Board of Supervisors, Fulton County, IL.

Submerged and Shore Lands Legislative Investigating Committee. 1911. Report made in pursuance of the statute to the Governor of the State of Illinois and the Forty-Seventh General Assembly of Illinois. Vol. I. Illinois State Journal Co., Springfield.

Thompson, D.H. 1931. The fishing industry of Illinois River. Pages 69–72 *in* Some economic problems of the Illinois River valley, Illinois State Water Survey, Circular No. 12. Papers presented before the Economics Section of the Illinois State Academy of Science, Peoria, Illinois, 8 May.

Thompson, J. 1989. Case studies in drainage and levee district formation and development on the floodplain of the lower Illinois River, 1890s to 1930s. Water Resources Center Spec. Rep. No. 016. Water Resources Center, University of Illinois, Champaign. 152 pp.

Thompson, J. 2002. Wetlands drainage, river modification, and sectoral conflict in the lower Illinois Valley, 1890–1930. Southern Illinois Press, Carbondale. 284 pp.

Thompson Lake Feasibility Committee. 1986. Minutes, December 5.

Thompson, M.D. n.d. Illinois: man and resources: past and present. Illinois State Museum, Springfield. 61 pp.

Timm, L. 1991. Florida man to buy Norris Farm. *Peoria Journal Star*, May 30.

Tucker, S.J. 1942. Indian villages of the Illinois country. Illinois State Museum, Scientific Papers, Vol. II, Part 1. Springfield, IL.

U.S. Department of Commerce and Labor. 1911. Special reports. Fisheries of the United States 1908. Government Printing Office, Washington, DC. 324 pp.

U.S. Fish and Wildlife Service. 1993. Emiquon National Wildlife Refuge. Final Environmental Assessment. North Central Region 3, U.S. Fish and Wildl. Serv. 142 pp.

Wagner, M.J., and R.J. Beck. 1991. Projected economic impacts of the proposed Emiquon National Wildlife Refuge, Fulton County, Illinois. Department of Agribusiness Economics, Southern Illinois University, Carbondale. 21 pp.

Watters, D. 1987. Havana native recalls past. *Pekin Daily Times*, February 9.

APPENDIX 1

Appendix 1. Alphabetical listing of common and respective scientific names of animals and plants cited in the text[a].

Common Name	Scientific Name[b]	Common Name	Scientific Name[b]
ANIMALS			
ant, bee, sawfly, wasp, and allies	Hymenoptera	midge	**Chironomus* sp.
		midge	*Palpomyia longipennis*
aquatic caterpillar	Lepidoptera	*mink	*Mustela vison*
*bass	*Micropterus* sp.	mollusk	Mollusca
bison	*Bison bison*	muskrat	*Ondatra zibethicus*
*bittern	*Ixobrychus* sp.	northern pintail	*Anas acuta*
bluegill	*Lepomis macrochirus*	paddlefish	*Polyodon spathula*
*blue-winged teal	*Anas discors*	pelican	Pelecanidae
bowfin	**Amia calva*	*pike	Esocidae
*brant	*Branta bernicla*	*pinnated grouse	*Tympanuchus cupido*
brook silverside	*Labidesthes sicculus*	greater prairie chicken	
bryozoan	*Bryozoan	*plover	Charadriidae
bryozoan	**Pectinatella magnifica*	pouch snail	*Physa* sp.
bryozoan	**Plumatella* sp.	prothonotary warbler	*Protonotaria citrea*
*buffalo fish	*Ictiobus* sp.	protozoan	*Ceratium hirundinella*
*buffalo	*Bison bison*	protozoan	**Euglena* sp.
*bustard (crane or heron)	Gruidae or Ardeidae	protozoan	Protozoa
		protozoan	*Strombidium claparedi*
*caddis fly	Trichoptera	pumpkinseed	*Lepomis gibbosus*
*canvas back	*Aythya valisineria*	*quail (bobwhite)	*Colinus virginianus*
carp (European)	**Cyprinus carpio*	*raccoon	*Procyon lotor*
*catfish	**Ameiurus* sp.	rotifer	*Anuraea aculeata valga*
catfish	Ictaluridae	rotifer	*Asplanchna girodi*
cattle	Bovidae	rotifer	*Cephalosiphon limnias*
*common hawk	Falconiformes	rotifer	*Distyla hornemanni*
*coot (American)	*Fulica americana*	rotifer	*Euchlanis pyriformis*
copepod	Cyclopidae	rotifer	*Megalotrocha semibullata*
*curlew	*Numenius* sp.	rotifer	*Oecistes intermediu*
damselfly	*Agrionid	rotifer	Rotifera
*deer	*Odocoileus virginianus*	round-mouthed snail	**Valvata* sp.
*dipper	Cinclidae	*sand hill crane	*Grus canadensis*
dragonfly	Aeschnidae	scud	*Amphipod
dragonfly	*Perithemis domitia*	scud	*Orchelimum* sp.
*elk	*Cervus elaphus*	scud	**Orchelimum nigripes*
fingernail clam	**Sphaerium* sp.	seed shrimp	*Limnicythere illinoisensis*
flat floater	*Anodonta suborbiculata*	shortnosed gar	*Lepisosteus platostomus*
fly	Diptera	sludge worm	Tubificidae
*fox squirrel	*Sciurus niger*	snail	Gastropoda
giant floater	*Anodonta corpulenta*	*snipe	*Gallinago* sp.
*goose (common wild)	Anserinae	speckled crappie	*Pomoxis sparoides*
grass pike	*Esox* sp.	*swan	*Cygnus* sp.
*green-winged teal	*Anas crecca*	thrush	Turdinae
*heron	Ardeidae	*turkey	*Meleagris gallopavo*
*ladybird	*Megilla maculata*	viviparid snail	**Campeloma* sp.
largemouth bass	*Micropterus salmoides*	warmouth	*Lepomis gulosus*
*leech	Hirudinea	*water turkey (cormorant)	Phalacrocoracidae
lesser scaup	*Aythya affinis*	*white pelican	*Pelecanus erythrorhynchos*
lilliput	*Lampsilis parva*	*widgeon	*Anas americana*
*loon	Gaviidae	*wood or summer(duck)	*Aix sponsa*
*mallard	*Anas platyrhynchos*	*woodcock	*Scolopax minor*
*may-fly nymph	Ephemeridae		
midge	*Chironomid		
midge	Chironomidae		

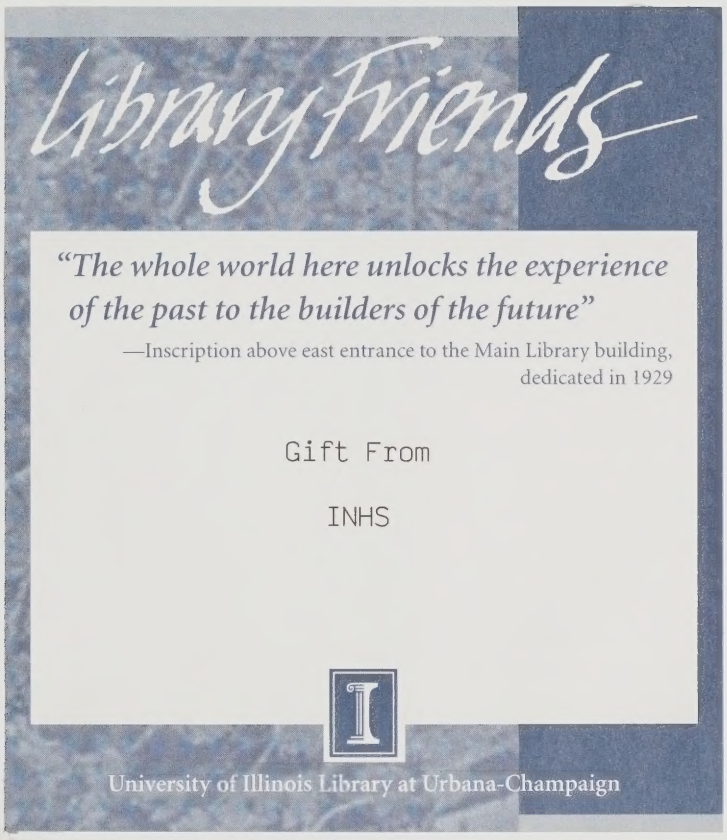
Appendix 1 continued on next page.

Appendix 1 continued.

Common Name	Scientific Name[b]
PLANTS	
*algae	Thallophyta
*arrowhead	*Sagittaria* sp.
azolla	**Azolla* sp.
bean	*Phaseolus* sp.
bulrush	*Scirpus* sp.
*button bush	*Cephalanthus occidentalis*
*cut-grass (rice)	*Leersia oryzoides*
*deer tongue	**Potamogeton* sp.
(pondweed)	*Ceratophyllum* sp.
duckweed	**Lemna* sp.
*duckweed	*Lemnaceae
duckweed (ducksmeat)	**Spirodela* sp.
*elm	*Ulmus* sp.
*flag (river bulrush)	*Scirpus fluviatilis*
*grass	Poaceae
hornwort	*Ceratophyllum* sp.
hornwort	**Ceratophyllum demersum*
*lotus	*Nelumbo lutea*
maize (corn)	*Zea mays*
*maple	*Acer* sp.
pecan tree	*Carya illinoensis*
*pickerel weed	*Pontederia cordata*
pin oak	*Quercus palustris*
pumpkin	*Cucurbita* sp.
*rush	Juncaceae
*short bog-rush	*Juncus* sp.
*smartweed	**Polygonum* sp.
soybean	*Glycine max.*
squash	*Cucurbita* sp.
watermeal	**Wolffia* sp.
wheat	*Triticum aestivum*
*white water lily	*Nymphaea tuberosa*
*wild rice	*Zizania aquatica*
*willow	*Salix* sp.

[a] Spelling and terminology of common and scientific names used in quotations (denoted by *) are presented as they appear.

[b] Some scientific names are listed as presented in the reference literature and may differ from current terminology.


Library Friends
"The whole world here unlocks the experience of the past to the builders of the future"
—Inscription above east entrance to the Main Library building, dedicated in 1929
Gift From
INHS
University of Illinois Library at Urbana-Champaign

UNIVERSITY OF ILLINOIS-URBANA
3 0112 063491283

Illinois Natural History Survey
607 East Peabody Drive
Champaign, Illinois 61820

A division of the Illinois
Department of Natural Resources